Aug. 11, 1936. L. F. WOODRUFF ET AL 2,050,745

COMBINED PERFORATING AND PRINTING MECHANISMS

Original Filed Aug. 17, 1929 4 Sheets-Sheet 1

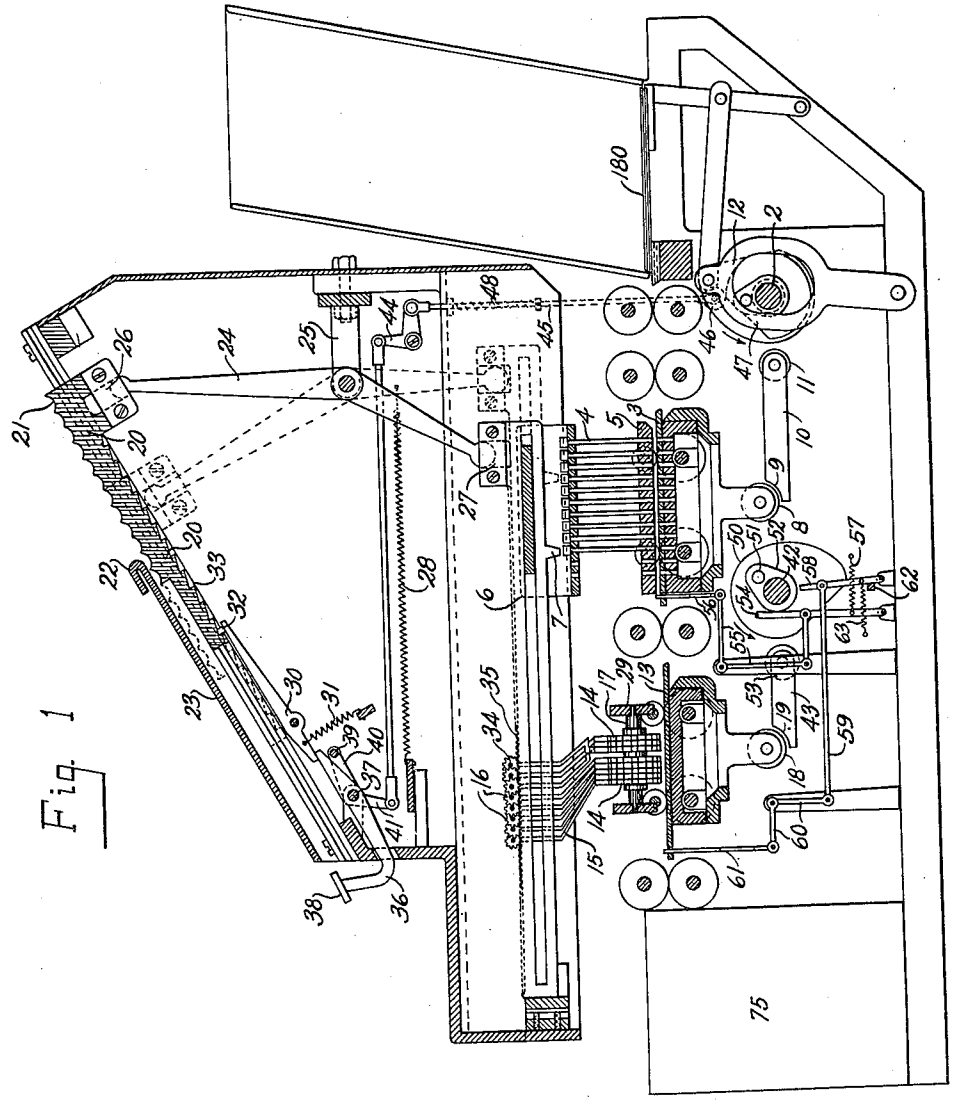


Fig. 1

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Original Filed Aug. 17, 1929 4 Sheets-Sheet 2

Fig. 4

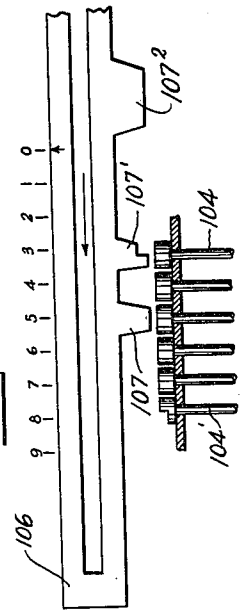
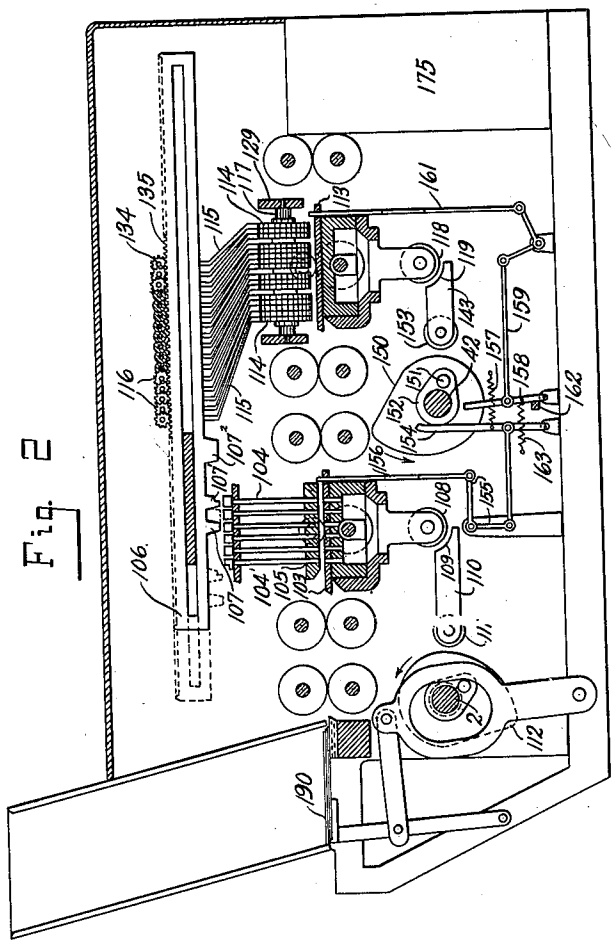


Fig. 2



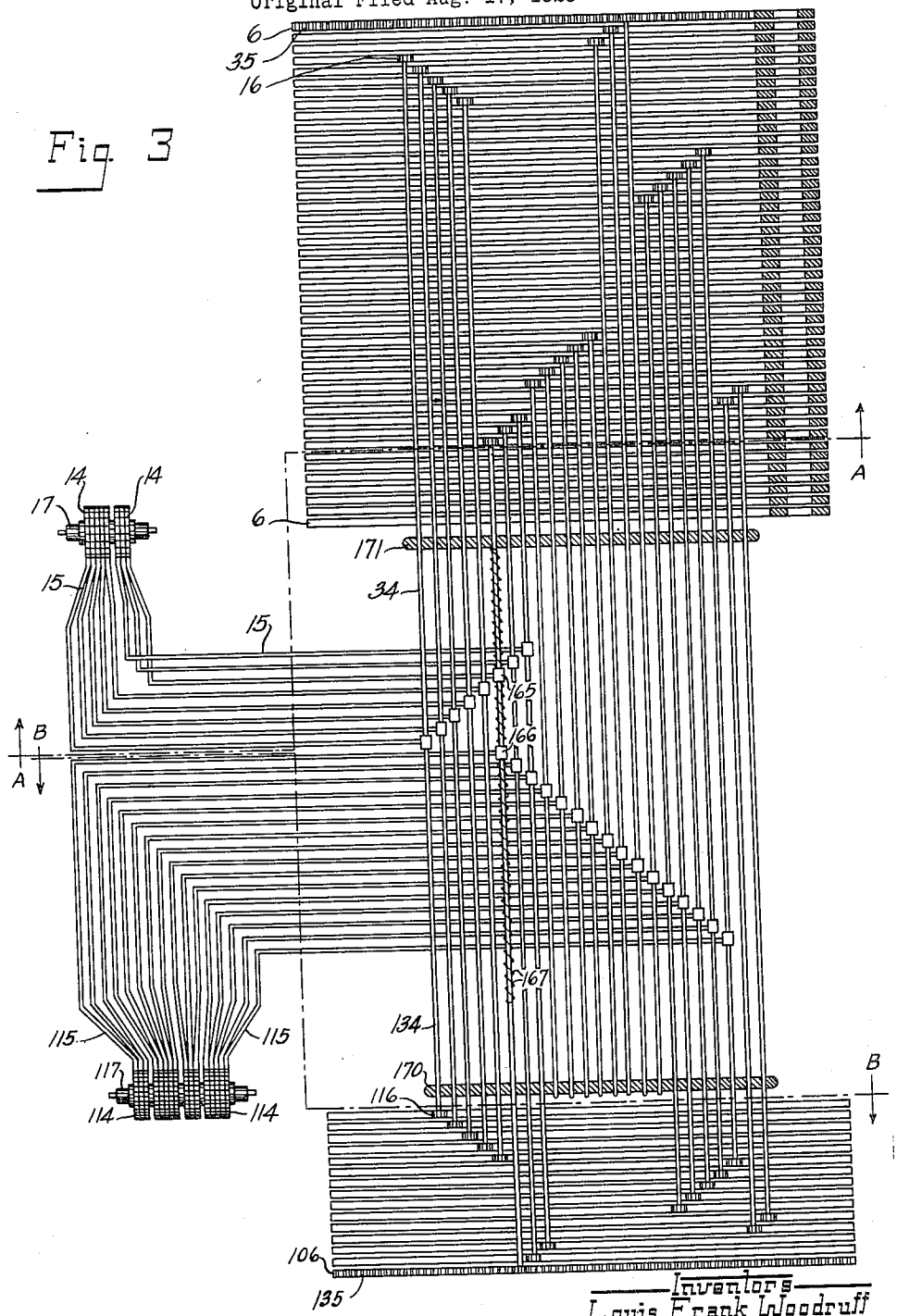
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COMBINED PERFORATING AND PRINTING MECHANISMS

Original Filed Aug. 17, 1929 4 Sheets-Sheet 3

Fig. 3



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COMBINED PERFORATING AND PRINTING MECHANISMS

Original Filed Aug. 17, 1929 4 Sheets-Sheet 4

Fig. 5

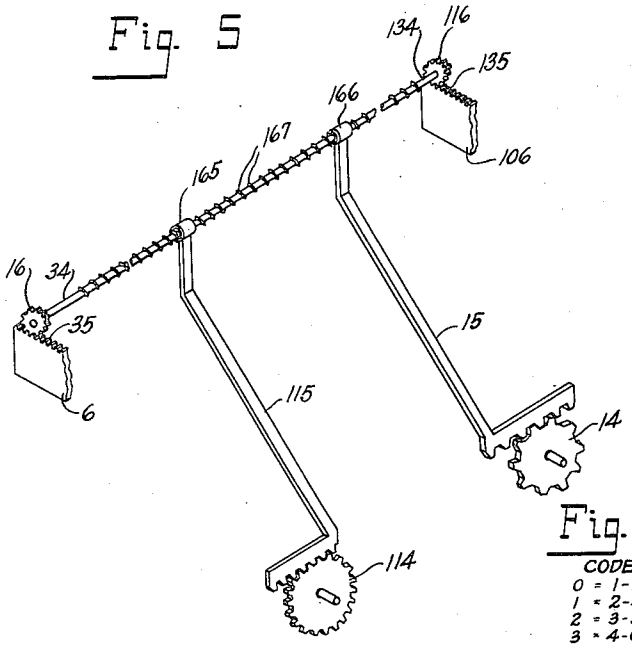


Fig. 6

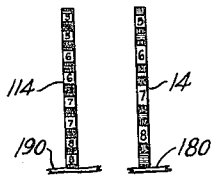


Fig. 7

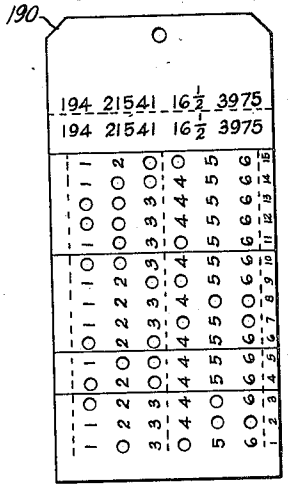
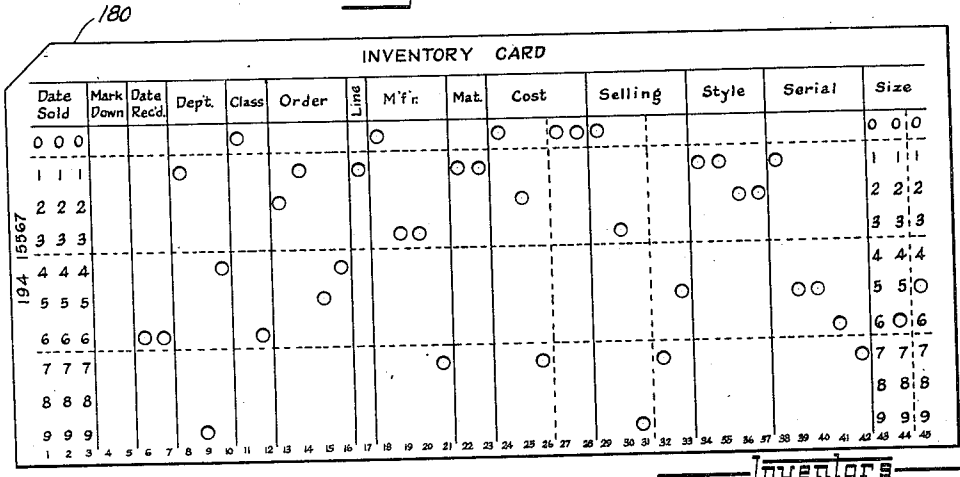


Fig. 9

CODE

0 = 1-3
1 = 2-4
2 = 3-5
3 = 4-6
4 = 1-5
5 = 1-2
6 = 2-3
7 = 3-4
8 = 4-5
9 = 5-6

Fig. 8



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UNITED STATES PATENT OFFICE

2,050,745

COMBINED PERFORATING AND PRINTING MECHANISMS

Louis Frank Woodruff, Brighton, Mass., and Martin L. Nelson, Park Ridge, Ill.; said Nelson assignor, by mesne assignments, to Associated Electric Laboratories, Inc., Chicago, Ill., a corporation of Delaware; said Woodruff assignor to Central Records, Inc., Chicago, Ill., a corporation of Delaware

Application August 17, 1929, Serial No. 386,546
Renewed December 12, 1932

33 Claims. (Cl. 101—19)

The present invention relates to improvements in combined perforating and printing mechanisms for perforating and printing cards used for statistical purposes.

The main object of the invention is the combination of two mechanical card perforating mechanisms and two card printing mechanisms into a unitary structure and in which the various mechanisms are selectively set and controlled from a single set of slides or actuators. To this end a machine, similar in many respects to the machine disclosed in Patent No. 1,086,397, issued February 10, 1914, to J. Powers, has been contrived, comprising two card perforating mechanisms, two card printing mechanisms, and a slide mechanism for selectively and simultaneously setting the perforating and printing mechanisms of the machine so that when the two cards are simultaneously fed through the machine after the setting operation they are both printed thereon and perforated therein certain data relating to certain information in accordance with the setting of the slides.

One of the features of the invention relates to the mechanical arrangements between the two perforating mechanisms whereby two different types of cards are simultaneously perforated:—one with single perforations and the other with double coded perforations equivalent to the single perforations.

Another feature relates to the mechanical arrangement by means of which the double coded perforations are accomplished.

These and other features not specifically mentioned may be considered more in detail in the accompanying detailed description and drawings comprising Figs. 1 to 9, inclusive, which show a sufficient amount of apparatus to enable the invention to be described and understood.

The construction and operation of the various parts of the machine are substantially similar to the machines shown in United States Patent No. 1,086,397, issued February 10, 1914 to J. Powers and United States Patents Nos. 992,245, and 992,246, also issued to J. Powers, and therefore, certain details have been omitted from the drawings in order to reduce the number of sheets of drawings and to more clearly show the invention.

Fig. 1 is, in part, a vertical section on the line A—A indicated in Fig. 3 for perforating and printing the inventory cards, such as shown in Fig. 8; Fig. 2 is, in part, a vertical section on the line B—B indicated in Fig 3 for perforating and printing the merchandise cards, such as shown in Fig. 7; Fig. 3 is a top view showing in a diagrammatic manner the mechanical connections between the two perforating and the two printing mechanisms; Fig. 4 is an enlarged view of one of the slide bars of the double-code perforating mechanism showing three projecting lugs for controlling the punches; Fig. 5 is a perspective diagrammatic view showing in detail the connections and manner of control between the two slide bars of the two perforating mechanisms and two print wheels of the two printing mechanisms; Fig. 6 is an end view of the print wheels; Fig. 7 shows a merchandise card which has been perforated and printed by the perforating and printing mechanism; Fig. 8 shows an inventory card also perforated and printed by the machine; and Fig. 9 is the code for code-punching the merchandise card. Throughout the drawings similar parts have been marked with similar reference characters.

Referring now more particularly to Fig 1 of the drawings the punching and selecting arrangements are substantially the same as set forth in the aforementioned patents, and need, therefore, only be described in a general way. At the upper portion of the frame are suitably guided a series of slides **20** having along their top edges suitable indications or notches **21**, that are shown as numbered from **1** to **12**, but obviously a greater or less number could be used. Near the last of these indications is arranged a stop-bar **22**, that is shown as one of the edges of a plate **23**. Upon placing a suitable obstruction, such as the finger, in any of these notches, and then causing the finger to advance the slide, this movement will be arrested when the finger strikes the bar **22**, and the distance the slide will have moved will correspond to the notch on the slide. Each of these slides is connected with one of the said slide bars or actuators **6** and arranged whereby the movement of the slide according to any notch will advance the slide **6** to move the lug **7** along over a corresponding number of notches, whereby the arrest of the slide will arrest the lug in actuating position for the corresponding punch. It will be observed that there are twelve notches in the slide bar but only ten of which are arranged to be used in the present invention although arrangements have been provided for using twelve punches if necessary.

Suitable means are also provided for holding the slide accurately positioned in any of the

desired positions at which the finger engages the stop bar, and for retracting the slide when the punching mechanism has operated. For each of the slides is a lever 24 pivoted on a bar 25 at the intermediate portion, one end of the lever working in a slot extension 26 of the slide and the other end working in a slot extension 27 of the slide members 6 or actuators, the arms of the lever being proportioned to give proper motion to the actuator bar from the slide 20. A spring 28 connected to the lever 24 serves to return it and the two slides to normal position when released. A pawl lever 30 is pivoted below each of the slides 20 and by a spring 31 connected therewith, causing the end 32 of the pawl to engage ratchet teeth 33 in the lower face of the slide 20, which teeth correspond precisely with the said notches in position. Thus when any of the slides are advanced until the finger engages the bar, the ratchet lever will be pressed into the corresponding notch, that will prevent retraction of the slide by the lever 24 and connected spring, but the bar will be retracted until the ratchet pin engages the side of the teeth to accurately position the lever, whereby the lug 7 will be in the proper registering position. The several rows of these slides 20 can each be actuated to the desired notch. Thereupon the punch mechanism is set into operation from the main shaft by a suitable means, such as an operation of a key that will serve to connect the main shaft with an operating shaft, shown in the aforesaid patents, and hence not necessary to set forth herein.

In order to return all of the slides to their normal positions after the punch device has operated, means is provided for tripping all of the ratchet levers 30, and which is preferably automatic and effected at the final operation of the revolution of the main shaft 2. Means are also provided whereby each of the slides after being advanced to a certain registering position of the notches and locked by the pawl end 32, can be released without disturbing any of the other slides that might have been advanced. A series of levers 36 is pivoted on a cross shaft 37 suitably supported in the frame and each of the levers engages the heel of the lever 30, whereby depression of the finger plate 38 of the lever 36 will swing the lever 30 and release the slide 20; which latter will be returned through the lever 24 and spring 28.

Under the front portion of all of the levers 36 extends a universal bar 39 that is connected at both ends with arms 40 fast to shaft 37, an arm 41 on this shaft connects by link 43 with a rock arm 44, and from the latter a push rod 45 carrying a roller 46 is engaged by the latter on a cam 47, a spring 48 serving to hold the roller against the cam. At the latter part of the revolution of the shaft 2 the cam will cause the roller to elevate the push-rod and through said connections the universal bar 39 is swung upward to shift all of the levers 41 and 32, thereby releasing all of the slides 20 that might have been advanced, and which operation is automatically effected and requires no attention on the part of the operator.

From the above it will be manifest that to set any punch in any desired one of the rows, or all of them, it is only necessary to place the finger in the notch on the slide corresponding to the indication desired, and advance the slide until the finger strikes the obstruction, and then release the slide whereupon it will be accurately positioned by the ratchet-arm, and by such operation the stop-bar or slide for the corresponding punch will be actuated or set. After the desired number of such slides have been so manipulated, simply pressing the release key will cause the cooperation of the shaft and punch mechanism to cause holes to be punched in the card corresponding to the indications that have been brought to the stop bar. It is understood that suitable mechanism is also provided for feeding in the cards and also feeding them from the punch mechanism, which is also set forth in the said patents. In the lower part of the frame work is mounted a main driving shaft 2, carrying several cams for actuating the punching mechanism and also the card feeding machanism. The punching mechanism is shown in the form of a carrier plate 3 having perforations therein cooperating with the punches 4 in a stationary punch plate 5; whereby upon elevation of the carrier 3 with a card thereon, the card would serve to lift the punch 4, but upon arresting any of these punches they will be caused to punch the card. Above the punches are arranged a number of slides 6 carrying projecting lugs 7 that are brought to register with the several punches as the slide is advanced by the selecting means. As shown in the drawings the slides 6 are normally set to perforate the card in the zero position.

To elevate the carrier 3, a roller 8 thereon is engaged by the cam end 9 of a slide 10 suitably guided in the frame to have a roller 11 thereon engaged by a cam 12 on the shaft 2. Only one row of punches is shown, but it is understood that there are a series of such rows that are identical in construction, and the movement of the carrier 3 will operate all of the punches that have been set in the several rows.

The general operation just described is substantially the same as described in Patent 1,086,397, previously referred to and from now on the various improvements will be described in detail.

It will be noted that the slide bars or actuators 6 are provided on their upper edge with teeth in which the gears 16 rotate on their shafts 34 when the slide bars or actuators 6 are moved from their normal position. The operation of the actuator 6 to the right, as shown in Fig. 1 by the dotted lines, causes the corresponding gear 16 in mesh therewith to be actuated by the teeth 35 to rotate the shaft 34 to set both the printing mechanisms and the perforating mechanisms as will be described more fully hereinafter.

The shaft 42 is connected with the main shaft 2 in any suitable manner so that shaft 42 rotates in synchronism with the main shaft 2. The shaft 42 has a cam 50 which engages the roller 53 to cause the bar 43 to engage a roller 18 to elevate the carrier plate 13 so that the card on the carrier plate will be raised up against the print wheels 14 which have been set by means of the operation of the slide actuators 6 and the gears 16. This operation is substantially the same as previously described for the punching operation and it will be noted that the cams on the two shafts 2 and 42 are so positioned and timed with respect to each other that the card is first punched and after it has been released from the punching mechanism is then printed as just described.

Another cam 52 is also mounted on the shaft 42 for controlling the stop card lever 56 in order to stop the card so that it may be punched and later release the card so that it may be fed on into the printing mechanism. The various cams on the shaft 42 rotate in the direction of the arrow and when the cam 52 strikes the lever 54 the stop lever 56 is drawn down by means of the rock arm 55 so that the rollers now take the card into the printing mechanism where it is stopped by the stop lever 61. As soon as the card is in position under the printing mechanism on plate 13 the cam 50 operates the plate 13 to raise it up against the print wheels 14 to cause the card to be printed. A little after this the lug 51 engages the lever 58 and moves it to the right in such a manner that the lever 59 and rock arm 60 move the stop lever 61 in a downward direction to release the card so that the rollers now operate to drop the card in the card hopper 75.

The stop levers 56 and 61 have two projecting arms shaped in the manner of the letter U to maintain the card in the proper position. It is believed that a general description of the sequence of operation at this time will more readily enable the invention to be understood. After all of the slides 20 have been actuated and, therefore, all of the punches and print wheels have been set, the shafts 2 and 42 and the rollers are set in operation. The card is then fed from the card hopper through the rollers by the operation of the lug on shaft 2 in the well known manner and the rollers advance the card until the card strikes the stop 56 in readiness to be perforated. As the shafts 42 and 2 continue to rotate the cam 12 causes the carrier 3 to be elevated and punch the card in accordance with the setting of the various slide bars 6. Shortly after the punching operation the stop lever 56 is drawn downward by the engagement of the cam 52 with lever 54 and the rollers then carry the card on until the card is stopped by the stop lever 61. Shortly after this the cam 50 operates and elevates the carrier plate 13 so that the card is raised up against the print wheels 14 and the card is printed in accordance with the setting of the slide bars 6. The continued rotation of the shafts 2 and 42 cause the lug 51 to operate the stop lever 61 so that the card may now pass from the print mechanism into the card hopper 75. The shaft 42 continues to rotate with the the shaft 2 and the levers 54 and 58, after the cams for actuating them have passed certain predetermined points permit the card stops 61 and 56 to be returned to their normal position or stop positions. The card stops 61 and 56 are returned to their normal position due to the action of the tension springs 57 and 63. After the shafts 2 and 42 have completed one revolution the shafts are automatically stopped in the normal position or the position shown in the drawings in readiness to perforate and print another card.

Referring now, particularly, to Fig. 2, it will be seen that the shafts 2 and 42 extend on through to the other perforating and printing mechanisms. At this end of the shaft, cams 112 and 150 control the perforating and printing operation of the plates 103 and 113 in a manner similar to the manner described for the cams 12 and 50 in Fig. 1. The cam 152 and lug 151 control the card stop levers 156 and 161 in a manner also similar to the manner described for the stop levers 56 and 61 of Fig. 1. The perforating and printing operation, therefore, is similar to that described for Fig. 1 and it is thought that no further explanation is needed.

In order to more fully describe the setting of the printing mechanisms and the double-code punching mechanism reference should be had to Fig. 3 in which is shown the connecting means between the various mechanisms. Each of the slides or actuators 6 are provided with teeth 35 in which gear wheels 16 engage to rotate shafts 34 when the actuators 6 are moved by the setting of the slides 6. The shafts 34 are held in place by any suitable bearing arrangements, such as shown at 171 and 170 to permit the shaft to rotate without moving in a longitudinal or transverse direction. The slide bars or actuators 106, which are somewhat similar to the slide bars or actuators 6, are also provided with teeth 135 which mesh with gears 116 so that when the shafts 134 or 34 rotate the corresponding slide actuators are moved a distance corresponding to the distance moved by the actuators 6. Corresponding actuators 6 and 106 are, therefore, moved a corresponding distance when the same are interconnected by means of gear wheels 116 and 16 and shafts 34 and 134. It will be noted also that not all of the actuators 6 are geared and, therefore, do not control any other mechanism. On each of the shafts 34 there is provided a spiral worm gear for the purpose of moving the levers 15 and 115 to control the print wheels 14 and 114. Each lever, such as lever 15 or 115, is provided with a threaded sleeve 165 or 166 which, when the shaft 34 is rotated causes the bars to move parallel with the length of the shaft. A detailed view of this arrangement is shown in Fig. 5 in which the bearing supports have been omitted. The lower part of lever 115 (Fig. 5) is provided with teeth for meshing with the teeth of the print wheel 114 so that when the lever 115 is moved parallel with the shaft, due to the rotation of the shaft, the print wheel 114 is also rotated. In a similar manner teeth are provided on the lower part of lever 15 for operating the print wheel 14. The periphery of the gear teeth of the print wheels are provided with numerals for printing on the card, as shown in Fig. 6. The print wheel 14 is used for printing the inventory card 180 and that portion of the inventory card which is printed comprises the department number 194, and the serial number 15,567, shown at the extreme left-hand edge of the inventory card. It will be noted that the print wheel 114 has twice as many teeth as the print wheel 14. The purpose of this is so that the merchandise card 190 will be printed with a double horizontal row of figures, such as the upper two printed rows or figures shown on the inventory card 190. It will also be noted that not all of the slide actuators 6 control slide actuators such as 106. This is because only a certain portion of the information punched in the inventory card is required on the merchandise card. It will also be seen that certain information is both printed and punched in and on all of the cards while other information is either only perforated or printed as may be required. The information printed and punched on the cards wil be explained more fully hereinafter.

One of the features, as previously stated, relates to the mechanical arrangement for code punching the merchandise card and this will

now be more fully explained by reference to Figs. 2 and 4. Fig. 4 shows one of the actuators 106 in normal position or in such a position that if the carrier 103 is elevated, as explained, holes will be punched in a certain column of the merchandise card in spaces 1 and 3. The lugs 107 and 107' hold the first and third punches 104 so that the merchandise card is perforated in the first and third spaces in one of its horizontal columns. In a similar manner when the actuator 106 is moved to the left the lugs 107 and 107' or the lug 107_2 always control two of the punches, such as punches 104. In normal position the actuator 106 is normally set to control punches 1 and 3 of the punches 104 which is equivalent to the digit 0 of the code shown in Fig. 9. As shown in Fig. 4 the lugs 107 and 107' control alternate punches while if the actuator 106 is moved far enough to the left the lug 107_2 controls two adjacent punches. The lug 107' and the punch 104' shown in Fig. 4 have sections cut away therefrom so that when the actuator 106 is set so that the lug 107_2 is directly above the first and second punches 104 the lug 107' will not permit the sixth punch or punch 104' to punch the card. Considering the above explanation and by referring to the scale shown at the top of Fig. 4 and the code shown in Fig. 9 it can be readily understood how the double-code punching is accomplished.

Referring now to Fig. 7, the merchandise card 190 is made for the purpose of fastening the same on to articles of merchandise to be sold. A hole near the upper center of the card is provided through which a string is passed in order to fasten the card to the merchandise article. The dotted horizontal line between the two printed horizontal rows of figures represent a line upon which the card is weakened so that the upper portion may be readily detached from the lower portion. The upper portion, when separated from the lower portion, is retained by the customer who bought the article while the lower portion is used for statistical and accounting purposes. The printed number 194 represents the department number of a retail store in which the card is used. The second printed number 21541 represents the order number and line so that the merchandise article may be identified for inventory purposes; the third printed figure or Figure 16½ represents the size of the article; and the last printed figure or 3975 represents the retail or selling price of the article to which the card is fastened. A word of explanation is thought necessary here because the print wheel which controls the third digit of the size of the article, or in this case the ½ figure, is a little different from the other print wheels in that this print wheel is provided with fractions on only some of the teeth on the print wheel while the remaining spaces of the teeth are blank and do not, therefore, print. The remainder of the merchandise card is divided into four vertical fields. The first field comprising the horizontal columns 1, 2, and 3 is the field in which the department number is code-punched. The second field comprising the horizontal rows 4 and 5 represents the class of the article to which the card is attached; the third field comprising the horizontal rows 6 to 10, inclusive, represents the selling price of the article; and the fourth field comprising the 11th to 15th horizontal rows, inclusive, comprise the serial number of the article. By referring to the punchings in the various horizontal rows and to the code shown in Fig. 9 it can readily be seen that the first field, when the double coded punching is deciphered, is punched 194 or department 194; the second field is punched 06 or class 6, the third field is punched 3975 or the selling price of the article, and the fourth field is punched 15567 or the serial number of the article.

The inventory card 180 shown in Fig. 8 shows at the extreme left the printed numbers 194 and 15567 which represent the department number and the serial number of the article for which the card is made out. This number is used to aid in filing the inventory cards away in the inventory file. The inventory card is divided into a number of vertical fields as shown in the upper printed row. It will be understood, however, that this printed data is permanently printed on the inventory card and is not a part of the present invention. The inventory card is single-punched by the punching mechanism shown in Fig. 1 in the manner illustrated and shown by the circular holes in the various fields. It is believed that this is well known and understood and, therefore, need not be described further. It will be noted, however, that only the department field, the class field, the selling field, and the serial number field is correspondingly punched in the merchandise card and, therefore, by examining Fig. 3 it will be seen that the proper gearing and shafting connections are provided between the two punches so as to accomplish this double punching. It will also be noted that only certain of the fields in the inventory card control printing mechanism for either the merchandise or inventory cards while other of the fields, one of which is the cost field comprising the vertical columns 24 to 28, inclusive, are not punched or printed on the merchandise card or printed on the inventory card.

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

What is claimed is:

1. In combination with a punch selecting mechanism, a second punch selecting mechanism, a first and a second printing mechanism and a selecting means for selectively setting said first punch selecting mechanism, and connecting means between said mechanisms for setting said second punch selecting mechanism and both of said printing mechanisms responsive to and in accordance with the setting of said first punch selecting means.

2. In a machine of the class described, the combination of two punching mechanisms, each including a series of rows of punches and a slide bar for each of said rows, a single projecting lug on each of the slide bars of the first mechanism and a plurality of projecting lugs on each of the slide bars of the second mechanism, and means for simultaneously moving a slide bar of the first mechanism and a slide bar of the second mechanism to cause the lug on the slide bar of the first mechanism to select one of the punches in the row individual thereto and to cause the plurality of lugs on the slide bar of the second mechanism to select a plurality of punches in the row individual thereto.

3. In a machine of the class described, the combination of two punching mechanisms each including a series of rows of punches and a slide bar for each row, the number of punches in the rows of the first mechanism being greater

than the number of punches in the rows of the second mechanism, a single projecting lug on each of the slide bars of the first mechanism and a plurality of projecting lugs on each of the slide bars of the second mechanism, means for simultaneously moving a slide bar of the first mechanism and a slide bar of the second mechanism to cause the lug on the slide bar of the first mechanism to select one of the punches in the row individual thereto and to cause the plurality of lugs on the slide bar of the second mechanism to select a plurality of punches in the row individual thereto, and means for simultaneously perforating two cards in accordance with the selection of said punches whereby one card is single punched and the other card is double code punched with corresponding information.

4. In a machine of the class described, the combination of two perforating mechanisms and two printing mechanisms for perforating and printing two cards, means for simultaneously controlling the setting of said perforating and printing mechanisms, and means for simultaneously feeding the cards through said machine to first stop, punch, and then release the cards and second to then stop, print and then release the cards.

5. In a machine of the class described, the combination of two perforating mechanisms and two printing mechanisms for printing and perforating two cards, means for simultaneously controlling the setting of said perforating and printing mechanisms, means for simultaneously feeding said cards through said machine to first stop, punch and then release the cards and second to then stop, print and then release the cards, each of said cards being punched and printed by a different one of said punching and printing mechanisms, and means whereby one of said cards is double code punched and the other is single punched in accordance with the same setting operation.

6. In a machine of the class described, the combination of two punching mechanisms and two printing mechanisms, a slide bar in each of said punching mechanisms for selecting punches and a printing device in each of said printing mechanisms for printing numerals, connecting means between said slide bars and said printing devices whereby if one of said slide bars is moved a predetermined distance the other slide bar and the corresponding printing devices are moved a corresponding distance, and means for simultaneously punching two cards and simultaneously printing two cards in accordance with the setting of said slide bars and said printing devices.

7. In a machine of the class described, the combination of a first punching mechanism, a second punching mechanism, a first printing mechanism, and a second printing mechanism having, a plurality of slide bars for selecting punches in the first punching mechanism, a lesser plurality of slide bars for selecting punches in the second punching mechanism, a plurality of printing devices in the first printing mechanism, a greater plurality of printing devices in the second printing mechanism, and connecting means whereby each of the slide bars of the second punching mechanism is interconnected with a corresponding slide bar of the first punching mechanism and to one corresponding printing device in each of the printing mechanisms or to only one corresponding printing device in only one of printing mechanisms while others of the slide bars of the first punching mechanism are only connected to corresponding printing devices in the second printing mechanism.

8. In a machine of the class described, the combination of a first punching mechanism, a second punching mechanism, a first printing mechanism, and a second printing mechanism having, a plurality of slide bars for selecting punches in the second punching mechanism, a plurality of printing devices in the first printing mechanism, a greater plurality of printing devices in the second printing mechanism, connecting means whereby each of the slide bars of the second punching mechanism is interconnected with a corresponding slide bar of the first punching mechanism and to one corresponding printing device in each of the printing mechanisms or to only one corresponding printing device in only one of printing mechanisms while others of the slide bars of the first punching mechanism are only connected to corresponding printing devices in the second printing mechanism, and means for selectively setting the slide bars of the first punching mechanism in accordance with certain information whereby said connecting means is effective to control the setting of the corresponding printing devices and slide bars in accordance with such information.

9. In a machine of the class described, the combination of a first punching mechanism, a second punching mechanism, a first printing mechanism, and a second printing mechanism having, a plurality of slide bars for selecting punches in the first punching mechanism, a lesser plurality of slide bars for selecting punches in the second punching mechanism, a plurality of printing devices in the first printing mechanism, a greater plurality of printing devices in the second printing mechanism, connecting means whereby each of the slide bars of the second punching mechanism is interconnected with a corresponding slide bar of the first punching mechanism and to one corresponding printing device in each of the printing mechanisms or to only one corresponding printing device in only one of printing mechanisms while others of the slide bars of the first punching mechanism are only connected to corresponding printing devices in the second printing mechanism, means for selectively setting the slide bars of the first punching mechanism in accordance with certain information whereby said connecting means is effective to control the setting of the corresponding printing devices and slide bars in accordance with such information, and means for simultaneously feeding an inventory card and a merchandise card through said machine whereby the inventory card is single punched with all the information and printed with only part of the information while the merchandise card is double code punched and printed with only a part of said information.

10. In a combined punching and printing machine, the combination of a punching mechanism and a printing mechanism, means for automatically feeding cards to and from said mechanisms, a first card stop associated with the punching mechanism, a second card stop associated with the printing mechanism, a shaft, and means connected with said shaft for first controlling the first card stop to stop the cards to permit the same to be punched and for then releasing said cards and for then controlling

the second card stop to stop the cards to permit the same to be printed and for then releasing the cards in a single rotation of said shaft, said means comprising cams and levers operated thereby in timed relation with respect to a single rotation of said shaft.

11. In a machine of the class described, the combination of two punching mechanisms, each including a series of rows of punches, slide bars in said mechanisms above said rows, a single projecting lug on said bars in the first mechanism and a plurality of projecting lugs on said bars in the second mechanism, and means for moving said slide bars to cause the lugs on said bars in the first mechanism to select a single punch in each row and to cause said plurality of lugs on said bars in the second mechanism to select a plurality of punches in each row.

12. In a machine of the class described, the combination of two punching mechanisms, each including a series of rows of punches, slide bars in said mechanisms above said rows, a single projecting lug on said bars in the first mechanism and a plurality of projecting lugs on said bars in the second mechanism, means for moving said slide bars to cause the lugs on said bars in the first mechanism to select a single punch in each row and to cause said plurality of lugs on said bars in the second mechanism to select a plurality of punches in each row, and means for simultaneously perforating two cards in accordance with the selection of said punches whereby one card is single punched and the other card is double code punched with corresponding information.

13. In a perforating machine having two punching mechanisms, punches in said mechanisms, controlling mechanism common to said mechanisms for selecting punches in the first mechanism and non-corresponding punches in the second mechanism, and means for simultaneously punching two different cards with non-corresponding perforations but with corresponding information in accordance with the setting of said common controlling mechanism.

14. In a combined printing and perforating machine, the combination of two punching mechanisms and two printing mechanisms, punches and printing devices in said mechanisms, controlling mechanism common to said mechanisms for selecting corresponding printing devices in said printing mechanisms and for selecting punches in the first punching mechanism but non-corresponding punches in the second punching mechanism, and means for simultaneously punching two different cards with non-corresponding perforations but with corresponding information and for simultaneously printing the cards with corresponding information in accordance with the setting of said common controlling mechanism.

15. In a machine of the class described, the combination of two punching mechanisms, each including a series of rows of punches, slide bars in said mechanisms above said rows, projecting lugs on said bars, means for moving said slide bars to cause the lugs on said bars to select a single punch in each row in the first mechanism and to select a plurality of punches in each row in the second mechanism, and means for simultaneously perforating two cards whereby one card is single punched and the other card is double code punched with corresponding information.

16. In a perforating machine having two punching mechanisms, punches in said mechanisms, controlling mechanism common to said mechanisms for selecting punches in the first mechanism and non-corresponding punches in the second mechanism, and means for punching two different cards with non-corresponding perforations but with corresponding information in accordance with the setting of said common controlling mechanism.

17. In a machine of the class described, the combination of two punching mechanisms, each including a series of rows of punches, slide bars in said mechanisms above said rows, projecting lugs on said bars, means for moving said slide bars to cause the lugs on said bars to select a single punch in each row in the first mechanism and to select a plurality of punches in each row in the second mechanism, and means for perforating two cards whereby one card is single punched and the other card is double code punched with corresponding information.

18. In a machine of the class described, the combination of a card punch, a tag punch, manipulative means for setting up data for controlling both punches, connections between the punches for simultaneously mechanically representing the same data on both, and means for printing an interpretation of a selection of the mechanically represented data.

19. In a machine of the class described, the combination of a card punch, a tag punch, manipulative means for representing data, means for punching data on a card in the card punch and on a tag in the tag punch, means for automatically selecting punches to be operated in the tag punch by said manipulative means, and means for printing an interpretation of a selection of the information punched on the tag.

20. In a machine of the class described, means including a series of manipulative devices and selectors operated thereby for controlling the perforating of data on a plurality of records simultaneously, and means controlled by said selectors for printing a selection of the perforated data on each of the perforated records.

21. In a machine of the class described, the combination of a plurality of manually movable setting slides, punch selectors on said slides for selecting punches from a plurality of sets of punches for perforating plural records, printing slide levers movable with said punch selectors and means for causing said printing slide levers to control differential positions of printing means for recording a selection of the data perforated on the plural records.

22. In a machine of the class described, for perforating and recording data on records including a series of punch selecting slides and a plurality of series of recording slide levers controlled by said selecting slides for recording the data in multiplicate.

23. In a machine of the class described, punches for perforating data on a record and numeral type members for printing an interpretation on a record to represent and interpret any of the ten digits 0–9 inclusive, including means for selecting the same plurality of punches and the corresponding numeral type for each digit and means for recording a plurality of such selections each by a plurality of perforations, but with a single symbol imprint, each and every digit always being represented by the same plurality of perforations, arranged in different location combinations.

24. In a machine of the class described, means for recording and interpreting numerical data by perforations and printing impressions where each and every digit is represented by the same number of plural perforations arranged in differing location combinations, consisting of a punch selector, perforating means, means for differentially positioning said punch selector in accordance with the different digits to always select the same plurality of said perforating means for each and every digit, and means controlled by said punch selector for positioning the symbol to be printed.

25. In a combined marking and recording machine, the combination of a marking mechanism and a recording mechanism, means for automatically feeding records to and from said mechanisms, a first record stopping means associated with the marking mechanism, a second record stopping means associated with the recording mechanism, and means for controlling the first stopping means to stop the records to permit the same to be marked, for then releasing the records and thereafter controlling the second stopping means to stop the records to permit the same to be recorded upon, and for thereafter releasing the records.

26. In a machine of the class described, the combination of two marking mechanisms each including a series of rows of marking means, slide bars in said mechanisms associated with said rows, projecting lugs on said bars, means for moving said slide bars to cause the lugs on said bars to select a single marking means in each row in the first mechanism and to select a plurality of marking means in each row in the second mechanism, and means for marking a plurality of records whereby one record is single marked and the other record is double code marked with corresponding information.

27. In a marking machine having two marking mechanisms, marking means of like character in said mechanisms, controlling mechanism common to said mechanisms for selecting a single marking means in the first mechanism and a plurality of non-corresponding marking means of like character in the second mechanism, and means in said mechanisms for marking two different cards by the selected marking means with non-corresponding markings of like character but with corresponding information in accordance with the setting of said common controlling mechanism.

28. In a machine of the class described, the combination of a record mechanism, a tag mechanism, manipulative means for setting up data for controlling both mechanisms, connections between the mechanisms for simultaneously mechanically representing the same data on both, and means for printing an interpretation of a selection of the mechanically represented data.

29. In a marking machine of the class described, the combination of a first marking mechanism, a second marking mechanism, manipulative means for representing data, means for marking data on a record in the first mechanism and on a record in the second mechanism, means for automatically selecting markers to be operated in the second mechanism by said manipulative means, and means for printing an interpretation of a selection of the information marked on the second record.

30. In a marking machine of the class described, means including a series of manipulative devices and selectors operated thereby for controlling the marking of data on a plurality of records simultaneously, and means controlled by said selectors for printing a selection of the marked data on each of the marked records.

31. In a marking machine of the class described, marking means for recording numerical data by marks where each and every digit from 0 to 9, inclusive, is represented by the same number of plural marks arranged in differing location combinations, marking selectors each having means for always selecting the same plurality of said marking means, and means for operating each marking selector to a different position for each digit from 0 to 9, inclusive, to select different combinations of said marking means by the different positioning of the marking selectors in accordance with the different digits, each position of the marking selectors always selecting the same plurality of marking means for each digit.

32. In a machine for printing and perforating a record printing means and perforating means, marking selectors each having means for always selecting the same plurality of said perforating means and for selecting certain ones of said printing means, means for operating each marking selector to a different position for each digit from 0 to 9, inclusive, to select different combinations of said perforating means and a different printing means by the different positioning of said selectors in accordance with the different digits, and means for thereafter printing and perforating the record in accordance with a plurality of said selections.

33. In a machine of the class described, perforating means for perforating data on a record and numeral type members for printing an interpretation on a record to represent and interpret any of the tens digits 0 to 9, inclusive, selecting means each including means for always selecting the same plurality of said perforating means and for selecting a single printing symbol on said members, and means for operating each selecting means to a different position for each digit from 0 to 9, inclusive, to select different combinations of said perforating means and a different printing symbol by the different positioning of said selecting means in accordance with the different digits.

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