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DECIMAL POINT SHIFTING DEVICE

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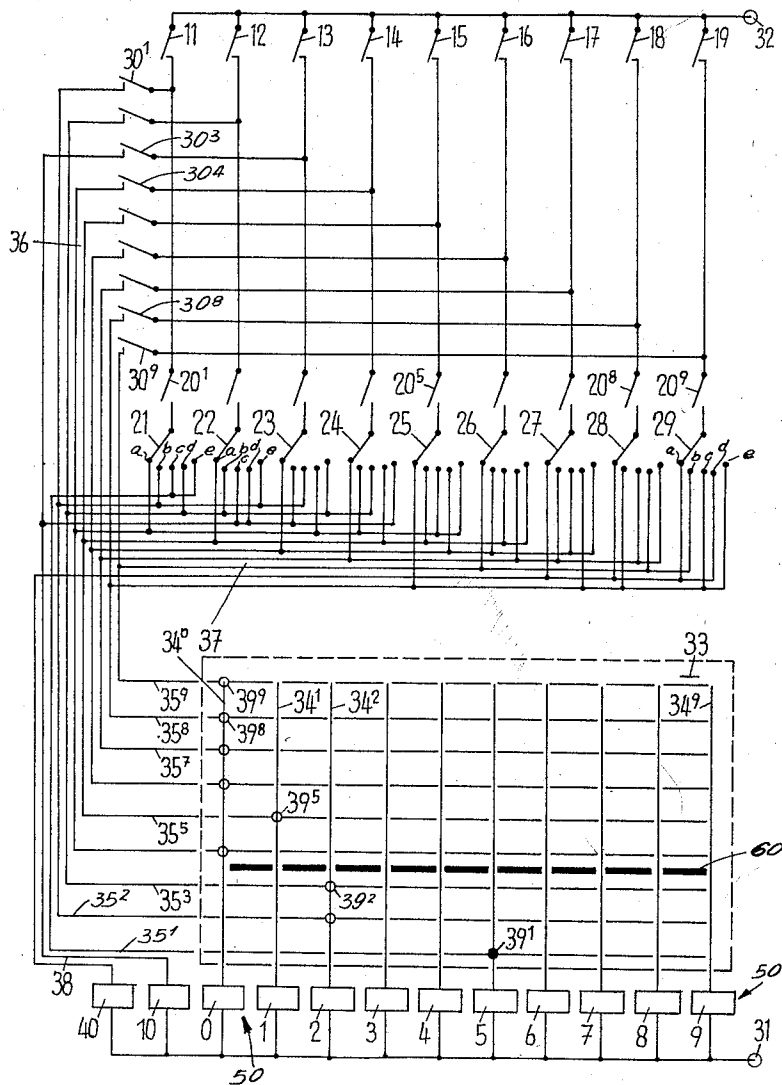


Fig. 2

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DECIMAL POINT SHIFTING DEVICE

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The present invention relates to a decimal point shifting device and more particularly to a device for typing or otherwise printing a number with the decimal point in a position different from the position of the decimal point in the same number which has been introduced into a calculating machine associated with the printing device.

In the type of office machine to which the present invention relates, a calculating mechanism is combined with a typing or printing mechanism, and the numbers which are introduced into the calculating machine, are registered in a contact register. Numerical values registered in the contact register are printed by the typing mechanism when the moving typewriter carriage consecutively actuates a set of stationary contacts which are respectively associated with the decimal orders and with the decimal point. According to the known art, a sequence of digits expressing a number, and having the decimal point in a predetermined position, is introduced into the calculating machine, and the same number is printed by the printing mechanism with decimal points in unchanged position. In the machines according to the known art it is not possible to vary the position of the decimal point after a number has been introduced into the contact register. However, it is often desired to print a number with the decimal point in a different position as compared with a position necessary for the computing operations in the calculator. For example, certain merchandise is generally referred to by the number of pieces, such as for instance 10,000 rivets, while the price of rivets is generally quoted per hundred. Consequently, while a transaction concerning 10,000 rivets has to be booked, the unit price for rivets has to be multiplied by 100, and not by 10,000.

It is one object of the present invention to provide a decimal point shifting device for printing a number with the decimal point in a position different from the position of the decimal point in the same number introduced into a calculator associated with the printing device.

It is another object of the present invention to provide in a machine in which the printing mechanism is actuated by a platen carriage for printing a number having a decimal point, switch means by which the decimal point is set in a position different from the position in which a respective number was introduced into a contact register.

It is another object of the present invention to provide multi-position switch means for establishing different connections between carriage actuated contacts which are respectively associated with decimal orders and with the decimal point, and actuating relays for the printing device of the machine which are respectively associated with different digits and with the decimal point.

It is another object of the present invention to provide spacing means for shifting the carriage stepwise when the printing means are located opposite places in which no printing is desired.

It is a further object of the present invention to provide means for rounding of the lowest decimal orders when

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such orders would have to be printed in positions which are no longer available due to the shifting of the decimal point.

With these objects in view, the present invention mainly consists in a decimal point shifting device which comprises, in combination, a set of carriage actuated contacts including a plurality of carriage actuated contacts respectively associated with decimal orders and one carriage actuated contact associated with the decimal point and being located in a predetermined position with respect to the other carriage actuated contacts, so that the carriage actuated contact associated with the decimal order is actuated in a predetermined sequence with the other carriage actuated contacts when the carriage moves along the carriage actuated contacts; a set of actuating relays including a plurality of digit relays respectively associated with different digits for causing the printing of digits, and a decimal point relay for effecting the decimal point; and switch means connecting the carriage actuated contacts with the actuating relays, and being movable between a plurality of positions for establishing different connections between the carriage actuated contacts and the actuating relays for actuating the decimal point relay and the digit relays in different sequences in each of the positions of the switch means whereby a number may be printed with the decimal point in different positions.

In the apparatus to which the present invention is preferably employed, a contact register is provided which includes a set of first conductors respectively associated with different digits and connected to the digit relays of the actuating relays, and a set of second conductors respectively associated with decimal orders, and a plurality of number contacts for connecting selected first conductors with selected second conductors, respectively. The above mentioned switch means connect the set of carriage actuated contacts with the second conductors and with the decimal point relay, respectively.

In a preferred embodiment of the present invention the switch means are multi-position switch means including a set of movable contact members respectively connected to the set of carriage actuated contacts, and a plurality of sets of fixed contact members. The fixed contact members of each set of fixed contact members are differently connected to the second conductors of the contact register and to the decimal point relay for establishing different connections between the carriage actuated contacts and the actuating relays in the different positions of the multi-position switch means.

Preferably, a set of switches is provided for directly connecting the carriage actuated contacts to the second conductors and to the decimal point relay for printing a number with the decimal point in a normal position determined by the carriage actuated relays.

The novel features which are considered as characteristic for the invention are set forth in particular in the appended claims. The invention itself, however, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following description of specific embodiments when read in connection with the accompanying drawings, in which:

Fig. 1 shows a form on which transactions are recorded by the printing means in accordance with the present invention; and

Fig. 2 is a diagram illustrating the arrangement according to the present invention.

Referring now to the drawings, and more particularly to Fig. 1, the illustrated form is a bill. The printed columns, starting from the left, consecutively state the subject of the transaction, the number of price units, the number, the price per price unit, and the total.

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The arrangement of the form will perhaps be best understood with reference to the penultimate item, Niepe, which means rivets. The price of rivets is quoted per hundred and is 3.20 as shown in the second column from the right. 500 rivets are sold as shown in the third column from the right. However, in order to arrive at the total price of the sold 500 rivets, the price per unit has to be multiplied with the number of units, which is 5. Consequently, it is necessary to introduce into the calculator the number 5.00 in order to arrive at the correct total, 16.00 shown in the last column on the right. In accordance with the present invention, the number 500 is printed in the number column, while the number 5 is introduced into the calculator for producing the correct total.

In the first item all decimal orders of the number 10 before the decimal point are printed, with the zeroes suppressed. In printing the price, it is necessary to place the decimal point, and to print two orders behind the decimal point corresponding to cents. The total is printed in the same manner.

The second item refers to pipes, and the price is computed per meter of pipe length, whereas the pipe length is stated in meters and centimeters. The meters are first printed, then the decimal point is expressed, and then two further orders are printed. For computing the total, the number of meters, 25, is introduced into the calculator.

The sixth item refers to hooks for which the price is quoted per thousand. The number of pieces is printed with a decimal point, whereas the number of price units is introduced into the calculator with the decimal point shifted three decimal orders so that by multiplication the total is immediately obtained. In the last item the price is quoted per hundred, so that the third column contains 56.50 pounds, whereas the second column shows the value introduced into the calculating machine for obtaining the correct total by multiplication with the price per unit.

The last line refers to the discount which is generally quoted in percent. In the present example, the discount is 33⅓%. Consequently it is necessary to introduce into the calculator the same number with the decimal point shifted for two decimal orders, and to multiply the amount by 0.333.

From the examples of Fig. 1 it will become apparent that it is highly advantageous to shift the position of the decimal point between computing operation and printing operation. In accordance with the problems, a rounding off of the last orders, and the positioning of the digits with respect to the position of the decimal point is effected.

Fig. 2 illustrates in a diagram the required switches and circuits. The number which is to be printed is registered in the contact register 33 and is expressed by number contacts 39¹⁻⁹. The number contacts are shiftable and produce selective connections between a set of first conductors 34⁰⁻⁹, and a set of transverse second conductors 35¹⁻⁹ which are respectively associated with consecutive decimal orders. The first conductors 34⁰⁻⁹ are respectively connected to the actuating relays 50 which are provided for printing the digits 0-9. An actuating relay 10 is provided for printing, or otherwise representing, the decimal point, and an actuating relay 40 is provided for shifting the carriage one step for producing an empty space on the form in which nothing is printed. Means may be provided for suppressing the printing of zeroes in positions before the decimal point and before the highest integer.

In calculator machines in which a plurality of calculating devices or totalizers is provided, it is preferred to provide for each of the calculating devices, as well as for the keyboard, a contact register of the type illustrated in Fig. 2, and to connect such contact registers on the output side thereof by multiple circuit connections. The contact registers are selectively rendered effective by multi-position switch means such as the switch means 30¹⁻⁹ and 20¹⁻⁹.

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The contact register 33 may be arranged underneath a keyboard by which the desired connections between the first and second conductors are selectively produced by operating the keys. The contact register 33 may also be a storage device for numbers, and operated by type bars of the calculating machine, or by corresponding members.

In any event selected numbers are represented on the contact register 33, and when a connection is established by a number contact 39 between a second conductor 35 and a first conductor 34, the respective digit relay 50⁰⁻⁹ is actuated for printing a digit.

The terminal 32 of a source of current is connected to a set of carriage actuated contacts 11-19. These contacts are respectively associated with consecutive decimal orders and with a decimal point and are actuated by stops which are arranged on the typewriter carriage. The positions of the stops can be suitably adjusted. When the stops on the carriage move along the stationary carriage actuated contacts 11-19, these contacts are consecutively actuated in a predetermined sequence of the orders and the decimal point, starting with the contact 19.

In the first position of the form sheet column the contact 19 which corresponds to the highest decimal order is first closed. When the set of first switches 30¹⁻⁹ is in circuit closing position, a connection is established between the terminal 32 through contact 19, switch 30⁰, second conductor 35⁰, number contact 39⁰, first conductor 34⁰, the digit printing relay 50⁰ to the second terminal 31 of the source of current. Energizing of the actuating relay 50⁰ effects printing of the number 0, or if it is not desired to print meaningless zeroes in the highest decimal orders of a number, a suitable zero suppressing device may be actuated which produces stepwise shifting of the carriage through one space without the printing of the digit 0.

When the carriage moves one step to the next lower order, the carriage actuated contact 19 is released, and the carriage actuated contact 18 which corresponds to the next lower decimal order is moved to circuit closing position. A circuit is closed from terminal 32 through contact 18, switch 30⁸, second conductor 35⁸, number contact 39⁸, first conductor 34⁰ and through the zero digit relay 50⁰ to the second terminal 31. Of course, if the number contact 39⁸ would have been arranged at the crossing point of the first conductor 34¹ with the second conductor 35⁸, the digit 1 would have been printed.

As the carriage moves along the carriage actuated contacts, the contacts 17, 16, 15 and 14 are consecutively actuated so that corresponding digit relays 50 are energized. When the carriage actuated contact 13 is moved to circuit closing position by the carriage, a circuit is established through switch 30³, and the decimal point relay 10 to the terminal 31. Thereby the printing of the decimal point is effected.

Further movement of the carriage effects closing of the contacts 12 and 11. When contact 12 is closed, a circuit is established through switch 30², second conductor 35², number contact 39², first conductor 34², and the digit relay associated with the digit 2 is energized to print the digit 2 behind the decimal point. In the same manner the second decimal order behind the decimal point is printed upon actuation of the carriage actuated contact 11. The line 60 indicates the position of the decimal point in the contact register 33, and it will be noted that three decimal orders are available behind the decimal point since there are three second conductors 35¹, 35², and 35³, provided beyond the line 60. However when the first switches 30¹⁻³⁰ are operative, only two decimal orders behind the decimal point are used and printed.

For printing in the third column shown in Fig. 1, a different position of the decimal point may be required, and for this purpose second switches 20¹⁻⁹, and multi-position switch means 21, 22, 23, 24, 25, 26, 27, 28, and 29 are provided. The multi-position switch means in-

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clude a set of movable contact members, and a plurality of sets of fixed contact members. In the illustrated embodiment, five sets of fixed contact members are provided, the fixed contact members of the first set being designated by the index *a*, the fixed contact members of the second set being indicated by the index *b*, the fixed contact members of the third set being indicated by the index *c*, the fixed contact members of the fourth set being indicated by the index *d*, and the fixed contact members of the fifth set being indicated by the index *e*.

When the set of first switches 30¹⁻⁹ are opened, and the set of second switches 20¹⁻⁹ are closed, the multi-position switch means 21-29 becomes operative. The contact arms of the switch means 21-29 can be moved between five positions establishing contact with all fixed contacts *a*, or with all fixed contacts *b*, *c*, *d*, *e*, respectively.

The sets of fixed contacts *a-e* are connected to the second conductors 35¹⁻⁹, to the decimal point relay 10, and to the spacing relay 40 in different ways, so that in each of the positions of the multiple position switch means 21-29, the number registered in the contact register 33 is printed with the decimal point in a different position.

For example, in the illustrated position in which the movable contact members establish a connection between the carriage actuated contacts 11-29 with the fixed contacts 21^a-29^a, the respective number is printed to the unit order. The number 10 is printed as shown in the first line of Fig. 1, and instead of zeroes which would otherwise be printed in the highest decimal orders, the spacing relay 40 is energized so that the carriage performs steps without printing in the highest orders. Since the capacity of the calculating device which is assumed to have nine orders, is exceeded, the carriage must perform steps without printing in the highest orders. The carriage actuated contact 16 renders the second conductor 35⁹ effective through switches 26 and 20⁶. The lowermost order of the form sheet column is rendered effective by the carriage actuated contact 11 and is connected through switches 20¹ and 21 with the second conductor 35⁴. The second conductor 35⁴ corresponds to the unit order of the calculating devices. In the illustrated position of the switches 21-29, units are printed in the form sheet, as described above.

In the second example, the set of movable contact arms of the switch means 21-29 are connected to the set of fixed contacts *b*. In this position, the carriage actuated contact 11 is connected through second switch 20¹, and switch 21 with the second conductor 35², and the carriage actuated contact 12 is connected through switch 20² and switch 20 with the second conductor 35³. The automatic printing of the decimal point is effected through contact 13, switch 20³, switch 23 and line 38 which leads to the decimal point printing relay 10. The higher orders of the contact register 33 are correspondingly connected to the carriage actuated contacts which are associated with the higher orders. It will be noted that in position *b* of the switch means 21-29, the number is printed to the second decimal order behind the decimal point, and that in position *c* of the switch means 21-29, the number is printed to three decimal orders behind the decimal point, and in position *d*, the number is printed to one position behind the decimal point.

From the above description of the arrangement according to the present invention it will become apparent that a number which is registered in the contact register can be printed in accordance with the present invention with the decimal point differently placed.

The first switches 30, the second switches 20, and the switches 21-29 may be considered to together constitute multi-position switch means. When the switches 30¹⁻⁹ are in circuit closing position, the actuating relays 40, 10, and 50⁰⁻⁹ are actuated in a selected sequence, whereas upon operation of the multi-position switch means the actuating relays are operated in a different sequence.

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In the above-described arrangement it is possible to provide for each of the multiple lines 36 and 37 an independent contact register, and to correspondingly work with different calculating devices. The shifting of the decimal point can be effected in one or in several multiple lines of a plurality of multiple lines which are rendered effective by carriage actuated contacts. Preferably, a suitable rounding off relay is provided for effecting a rounding off of the digits of selected decimal orders.

It will be understood that each of the elements described above, or two or more together, may also find a useful application in other types of decimal point shifting devices differing from the types described above.

While the invention has been illustrated and described as embodied in a decimal point shifting device employing a contact register and multi-position switch means for shifting the decimal point of a number before printing, it is not intended to be limited to the details shown, since various modifications and structural changes may be made without departing in any way from the spirit of the present invention.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can by applying current knowledge readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention and, therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalence of the following claims.

What is claimed as new and desired to be secured by Letters Patent is:

1. In a device of the type described, in combination, a set of carriage actuated contacts including a plurality of carriage actuated contacts respectively associated with decimal orders and one carriage actuated contact associated with the decimal point and being located in a predetermined position with respect to said plurality of carriage actuated contacts, so that said one carriage actuated contact is actuated in a predetermined sequence with said plurality of carriage actuated contacts; a set of actuating relays including a plurality of digit relays respectively associated with different digits for causing the printing of digits, and a decimal point relay for effecting the decimal point; and switch means connecting said set of carriage actuated contacts with said set of actuating relays, and being movable between a plurality of positions for establishing different connections between said carriage actuated contacts and said set of actuating relays for actuating said decimal point relay and said digit relays in different sequences in each of said positions for printing a number with the decimal point in different positions.

2. In a device of the type described, in combination, a set of carriage actuated contacts including a plurality of carriage actuated contacts respectively associated with decimal orders and one carriage actuated contact associated with the decimal point and being located in a predetermined position with respect to said plurality of carriage actuated contacts, so that said one carriage actuated contact is actuated in a predetermined sequence with said plurality of carriage actuated contacts; a set of actuating relays including a plurality of digit relays respectively associated with different digits for causing the printing of digits, and a decimal point relay for effecting the decimal point; a contact register including a set of first conductors respectively associated with different digits and connected to said digit relays, respectively, and a set of second conductors respectively associated with decimal orders, and a plurality of number contact means for connecting selected first conductors with selected second conductors, respectively; and switch means for connecting said set of carriage actuated contacts with said second conductors and with said decimal point relay, respectively, and being movable between a plurality of positions for

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establishing different connections between said carriage actuated contacts and said set of actuating relays for actuating said decimal point relay and said digit relays in different sequences in each of said positions for printing a number with the decimal point in different positions.

3. In a device of the type described, in combination, a set of carriage actuated contacts including a plurality of carriage actuated contacts respectively associated with decimal orders and one carriage actuated contact associated with the decimal point and being located in a predetermined position with respect to said plurality of carriage actuated contacts, so that said one carriage actuated contact is actuated in a predetermined sequence with said plurality of carriage actuated contacts; a set of actuating relays including a plurality of digit relays respectively associated with different digits for causing the printing of digits, and a decimal point relay for effecting the decimal point; a contact register including a set of first conductors respectively associated with different digits and connected to said digit relay, respectively, and a set of second conductors respectively associated with decimal orders, and a plurality of number contact means for selectively connecting selected first conductors with selected second conductors, respectively; and multi-position switch means including a set of movable contact members respectively connected to said set of carriage actuated contacts, and a plurality of sets of fixed contact members, said set of movable contact members being movable between a plurality of connecting positions contacting different sets of fixed contact members, the fixed contact members of each set of fixed contact members being differently connected to said set of second conductors and to said decimal point relay for establishing different connections between said set of carriage actuated contacts and said set of actuating relays for actuating said decimal point relay and said digit relays in different sequences in each of said connecting positions of said switch means during actuation of said carriage actuated contacts in said predetermined sequence for printing a number with the decimal point in different positions.

4. In a device of the type described, in combination, a set of carriage actuated contacts including a plurality of carriage actuated contacts respectively associated with decimal orders and one carriage actuated contact associated with the decimal point and being located in a predetermined position with respect to said plurality of carriage actuated contacts, so that said one carriage actuated contact is actuated in a predetermined sequence with said plurality of carriage actuated contacts; a set of actuating relays including a plurality of digit relays respectively associated with different digits for causing the printing of digits, and a decimal point relay for effecting the decimal point; and switch means connecting said set of carriage actuated contacts with said set of actuating relays, and being movable between a plurality of positions for establishing different connections between said carriage actuated contacts and said set of actuating relays for actuating said decimal point relay and said digit relays in different sequences in each of said positions for printing a number with the decimal point in different positions, one of said different sequences being said predetermined sequence.

5. In a device of the type described, in combination, a set of carriage actuated contacts including a plurality of carriage actuated contacts respectively associated with decimal orders and one carriage actuated contact associated with the decimal point and being located in a predetermined position with respect to said plurality of carriage actuated contacts, so that said one carriage actuated contact is actuated in a predetermined sequence with said plurality of carriage actuated contacts; a set of actuating relays including a plurality of digit relays respectively associated with different digits for causing the printing of digits, and a decimal point relay for effecting the decimal point; a contact register including a set of first conductors

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respectively associated with different digits and connected to said digit relay, respectively, and a set of second conductors respectively associated with decimal orders, and a plurality of number contact means for selectively connecting selected first conductors with selected second conductors, respectively; and multi-position switch means including a set of movable contact members respectively connected to said set of carriage actuated contacts, and a plurality of sets of fixed contact members, said set of movable contact members being movable between a plurality of connecting positions contacting different sets of fixed contact members, the fixed contact members of each set of fixed contact members being differently connected to said set of second conductors and to said decimal point relay for establishing different connections between said set of carriage actuated contacts and said set of actuating relays for actuating said decimal point relay and said digit relays in different sequences in each of said connecting positions of said switch means during actuation of said carriage actuated contacts in said predetermined sequence for printing a number with the decimal point in different positions, one of said different sequences being said predetermined sequence.

6. In a device of the type described, in combination, a set of carriage actuated contacts including a plurality of carriage actuated contacts respectively associated with decimal orders and one carriage actuated contact associated with the decimal point and being located in a predetermined position with respect to said plurality of carriage actuated contacts, so that said one carriage actuated contact is actuated in a predetermined sequence with said plurality of carriage actuated contacts; a set of actuating relays including a plurality of digit relays respectively associated with different digits for causing the printing of digits, and a decimal point relay for effecting the decimal point; a contact register including a set of first conductors respectively associated with different digits and connected to said digit relay, respectively, and a set of second conductors respectively associated with decimal orders, and a plurality of number contact means for selectively connecting selected first conductors with selected second conductors, respectively; a set of first switches including a plurality of first switches connecting said plurality of carriage actuated contacts with said second conductors, respectively, and one first switch connecting said decimal point relay with the carriage actuated contact associated with the decimal point whereby said decimal point relay is actuated in said predetermined sequence with respect to said digit relays when said first switches are in circuit closing positions; a set of second switches including a plurality of second switches connected to said plurality of carriage actuated contacts, respectively, and one second switch connected to said one carriage actuated contact which is associated with the decimal point; and multi-position switch means including a set of movable contact members respectively connected to said second switches, and a plurality of sets of fixed contact members, said set of movable contact members being movable between a plurality of connecting positions contacting different sets of fixed contact members, the fixed contact members of each set of fixed contact members being differently connected to said set of second conductors and to said decimal point relay for establishing different connections between said set of carriage actuated contacts and said set of actuating relays when said second switches are in circuit closing position for actuating said decimal point relay and said digit relays in different sequences in each of said connecting positions of said switch means during actuation of said carriage actuated contacts in said predetermined sequence for printing a number with the decimal point in different positions.

7. In a device of the type described in combination, a set of carriage actuated contacts including a plurality of carriage actuated contacts respectively associated with decimal orders and one carriage actuated contact asso-

ciated with the decimal point and being located in a predetermined position with respect to said plurality of carriage actuated contacts, so that said one carriage actuated contact is actuated in a predetermined sequence with said plurality of carriage actuated contacts; a set of actuating relays including a plurality of digit relays respectively associated with different digits for causing the printing of digits, and a decimal point relay for effecting the decimal point; a contact register including a set of first conductors respectively associated with different digits and connected to said digit relay, respectively, and a set of second conductors respectively associated with decimal orders, and a plurality of number contact means for selectively connecting selected first conductors with selected second conductors, respectively; a set of first switches including a plurality of first switches connecting said plurality of carriage actuated contacts with said second conductors, respectively, and one first switch connecting said decimal point relay with the carriage actuated contact associated with the decimal point whereby said decimal point relay is actuated in said predetermined sequence with respect to said digit relays when said first switches are in circuit closing positions; a set of second switches including a plurality of second switches connected to said plurality of carriage actuated contacts, respectively, and one second switch connected to said one carriage actuated contact which is associated with the decimal point; and multi-position switch means including a set of movable contact members respectively connected to said second switches, and a plurality of sets of fixed contact members, said set of movable contact members being movable between a plurality of connecting positions contacting different sets of fixed contact members, the fixed contact members of each set of fixed contact members being differently connected to said set of second conductors and to said decimal point relay for establishing different connections between said set of carriage actuated contacts and said set of actuating relays when said second switches are in circuit closing position for actuating said decimal point relay and said digit relays in different sequences in each of said connecting positions of said switch means during actuation of said carriage actuated contacts in said predetermined sequence for printing a number with the decimal point in different positions, one of said different sequences being said predetermined sequence.

8. In a device of the type described, in combination, a set of carriage actuated contacts including a plurality of carriage actuated contacts respectively associated with decimal orders and one carriage actuated contact associated with the decimal point and being located in a predetermined position with respect to said plurality of carriage actuated contacts, so that said one carriage actuated contact is actuated in a predetermined sequence with said plurality of carriage actuated contacts; a set of actuating relays including a plurality of digit relays, respectively associated with different digits for causing the printing of digits, and a decimal point relay for effecting the decimal point; switch means connecting said set of carriage actuated contacts with said set of actuating relays, and being movable between a plurality of positions for establishing different connections between said carriage actuated contacts and said set of actuating relays for actuating said decimal point relay and said digit relays in different sequences in each of said positions for printing a number with the decimal point in different positions; and a spacing relay connected by said switch means to said carriage actuated contacts for effecting, when actuated by a carriage actuated contact, actuation of the next following carriage actuated contact.

9. In a device of the type described, in combination, a set of carriage actuated contacts including a plurality of carriage actuated contacts respectively associated with decimal orders and one carriage actuated contact asso-

ciated with the decimal point and being located in a predetermined position with respect to said plurality of carriage actuated contacts, so that said one carriage actuated contact is actuated in a predetermined sequence with said plurality of carriage actuated contacts; a set of actuating relays including a plurality of digit relays respectively associated with different digits for causing the printing of digits, and a decimal point relay for effecting the decimal point; a contact register including a set of first conductors respectively associated with different digits and connected to said digit relays, respectively, and a set of second conductors respectively associated with decimal orders, and a plurality of number contact means for connecting selected first conductors with selected second conductors, respectively; switch means for connecting said set of carriage actuated contacts with said second conductors and with said decimal point relay, respectively, and being movable between a plurality of positions for establishing different connections between said carriage actuated contacts and said set of actuating relays for actuating said decimal point relay and said digit relays in different sequences in each of said positions for printing a number with the decimal point in different positions; and a spacing relay connected by said switch means to said carriage actuated contacts for effecting, when actuated by a carriage actuated contact, actuation of the next following carriage actuated contact.

10. In a device of the type described, in combination, a set of carriage actuated contacts including a plurality of carriage actuated contacts respectively associated with decimal orders and one carriage actuated contact associated with the decimal point and being located in a predetermined position with respect to said plurality of carriage actuated contacts, so that said one carriage actuated contact is actuated in a predetermined sequence with said plurality of carriage actuated contacts; a set of actuating relays including a plurality of digit relays respectively associated with different digits for causing the printing of digits, and a decimal point relay for effecting the decimal point; a contact register including a set of first conductors respectively associated with different digits and connected to said digit relay, respectively, and a set of second conductors respectively associated with decimal orders, and a plurality of number contact means for selectively connecting selected first conductors with selected second conductors, respectively; multi-position switch means including a set of movable contact members respectively connected to said set of carriage actuated contacts, and a plurality of sets of fixed contact members, said set of movable contact members being movable between a plurality of connecting positions contacting different sets of fixed contact members, the fixed contact members of each set of fixed contact members being differently connected to said set of second conductors and to said decimal point relay for establishing different connections between said set of carriage actuated contacts and said set of actuating relays for actuating said decimal point relay and said digit relays in different sequences in each of said connecting positions of said switch means during actuation of said carriage actuated contacts in said predetermined sequence for printing a number with the decimal point in different positions; and a spacing relay connected by said switch means to said carriage actuated contacts for effecting, when actuated by a carriage actuated contact, actuation of the next following carriage actuated contact.

11. In a device of the type described in combination, a set of carriage actuated contacts including a plurality of carriage actuated contacts respectively associated with decimal orders and one carriage actuated contact associated with the decimal point and being located in a predetermined position with respect to said plurality of carriage actuated contacts, so that said one carriage actuated contact is actuated in a predetermined sequence with said plurality of carriage actuated contacts; a set of actuating

relays including a plurality of digit relays respectively associated with different digits for causing the printing of digits, and a decimal point relay for effecting the decimal point; a contact register including a set of first conductors respectively associated with different digits and connected to said digit relay, respectively, and a set of second conductors respectively associated with decimal orders, and a plurality of number contact means for selectively connecting selected first conductors with selected second conductors, respectively; a set of first switches including a plurality of first switches connecting said plurality of carriage actuated contacts with said second conductors, respectively, and one first switch connecting said decimal point relay with the carriage actuated contact associated with the decimal point whereby said decimal point relay is actuated in said predetermined sequence with respect to said digit relays when said first switches are in circuit closing positions; a set of second switches including a plurality of second switches connected to said plurality of carriage actuated contacts, respectively, and one second switch connected to said one carriage actuated contact which is associated with the decimal point; multiposition switch means including a set of movable contact members respectively connected to said second switches, and a plurality of sets of fixed contact members, said set of movable contact members being movable between a plurality of connecting positions contacting different sets of fixed contact members, the fixed contact members of each set of fixed contact members being differently connected to said set of second conductors and to said decimal point relay for establishing different connections between said set of carriage actuated contacts and said set of actuating relays when said second switches are in circuit closing position for actuating said decimal point relay and said digit relays in different sequences in each of said connecting positions of said switch means during actuation of said carriage actuated contacts in said predetermined sequence for printing a number with the decimal point in different positions, one of said different sequences being said predetermined sequence; and a spacing relay connected by said switch means to said carriage actuated contacts for effecting, when actuated by a carriage actuated contact, actuation of the next following carriage actuated contact.

12. In a device of the type described, in combination, a set of carriage actuated contacts including a plurality of carriage actuated contacts respectively associated with decimal orders and one carriage actuated contact associated with the decimal point and being located in a predetermined position with respect to said plurality of carriage actuated contacts, so that said one carriage actuated contact is actuated in a predetermined sequence with said plurality of carriage actuated contacts; a set of actuating relays including a plurality of digit relays respectively associated with different digits for causing the printing of digits, and a decimal point relay for effecting the decimal point; a contact register including a set of first conductors respectively associated with different digits and connected to said digit relays, respectively, and a set of second conductors respectively associated with decimal orders, and a plurality of number contact means for connecting selected first conductors with selected second conductors, respectively; switch means for connecting said set of carriage actuated contacts with said second conductors and with said decimal point relay, respectively, and being movable between a plurality of positions for establishing different connections between said carriage actuated contacts and said set of actuating relays for actuating said decimal point relay and said digit relays in different sequences in each of said positions for printing a number with the decimal point in different positions; and relay means for rounding-off the digits of the lowermost order and being connected by said switch means to said carriage actuated contacts.

13. In a device of the type described, in combination,

a set of carriage actuated contacts including a plurality of carriage actuated contacts respectively associated with decimal orders and one carriage actuated contact associated with the decimal point and being located in a predetermined position with respect to said plurality of carriage actuated contacts, so that said one carriage actuated contact is actuated in a predetermined sequence with said plurality of carriage actuated contacts; a set of actuating relays including a plurality of digit relays respectively associated with different digits for causing the printing of digits, and a decimal point relay for effecting the decimal point; a plurality of contact registers, each contact register including a set of first conductors respectively associated with different digits and connected to said digit relays, respectively, and a set of second conductors respectively associated with decimal orders, and a plurality of number contact means for connecting selected first conductors with selected second conductors, respectively; and switch means for connecting said set of carriage actuated contacts with said second conductors of each of said contact registers and with said decimal point relay, respectively, and being movable between a plurality of positions for establishing different connections between said carriage actuated contacts and said set of actuating relays for actuating said decimal point relay and said digit relays in different sequences in each of said positions for printing a number with the decimal point in different positions.

14. In a device of the type described, in combination, a set of carriage actuated contacts including a plurality of carriage actuated contacts respectively associated with decimal orders and one carriage actuated contact associated with the decimal point and being located in a predetermined position with respect to said plurality of carriage actuated contacts, so that said one carriage actuated contact is actuated in a predetermined sequence with said plurality of carriage actuated contacts; a set of actuating relays including a plurality of digit relays respectively associated with different digits for causing the printing of digits, and a decimal point relay for effecting the decimal point; a plurality of contact registers, each contact register including a set of first conductors respectively associated with different digits and connected to said digit relay, respectively, and a set of second conductors respectively associated with decimal orders, and a plurality of number contact means for selectively connecting selected first conductors with selected second conductors, respectively; and multiposition switch means including a set of movable contact members respectively connected to said set of carriage actuated contacts, and a plurality of sets of fixed contact members, said set of movable contact members being movable between a plurality of connecting positions contacting different sets of fixed contact members, the fixed contact members of each set of fixed contact members being differently connected to the sets of second conductors of said contact registers and to said decimal point relay for establishing different connections between said set of carriage actuated contacts and said set of actuating relays for actuating said decimal point relay and said digit relays in different sequences in each of said connecting positions of said switch means during actuation of said carriage actuated contacts in said predetermined sequence for printing a number with the decimal point in different positions.

15. In a device of the type described, in combination, a set of carriage actuated contacts including a plurality of carriage actuated contacts respectively associated with decimal orders and one carriage actuated contact associated with the decimal point and being located in a predetermined position with respect to said plurality of carriage actuated contacts, so that said one carriage actuated contact is actuated in a predetermined sequence with said plurality of carriage actuated contacts; a set of actuating relays including a plurality of digit relays respectively associated with different digits for causing the print-

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ing of digits, and a decimal point relay for effecting the decimal point; a plurality of contact registers, each contact register including a set of first conductors respectively associated with different digits and connected to said digit relay, respectively, and a set of second conductors respectively associated with decimal orders, and a plurality of number contact means for selectively connecting selected first conductors with selected second conductors, respectively; a set of first switches including a plurality of first switches connecting said plurality of carriage actuated contacts with said second conductors of each of said contact registers, respectively, and one first switch connecting said decimal point relay with the carriage actuated contact associated with the decimal point whereby said decimal relay is actuated in said predetermined sequence with respect to said digit relays when said first switches are in circuit closing positions; a set of second switches including a plurality of second switches connected to said plurality of carriage actuated contacts, respectively, and one second switch connected to said one carriage actuated contact which is associated with the decimal point; and multi-position switch means in-

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cluding a set of movable contact members respectively connected to said second switches, and a plurality of sets of fixed contact members, said set of movable contact members being movable between a plurality of connecting positions contacting different sets of fixed contact members, the fixed contact members of each set of fixed contact members being differently connected to said set of second conductors and to said decimal point relay for establishing different connections between said set of carriage actuated contacts and said set of actuating relays when said second switches are in circuit closing position for actuating said decimal point relay and said digit relays in different sequences in each of said connecting positions of said switch means during actuation of said carriage actuated contacts in said predetermined sequence for printing a number with the decimal point in different positions.

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