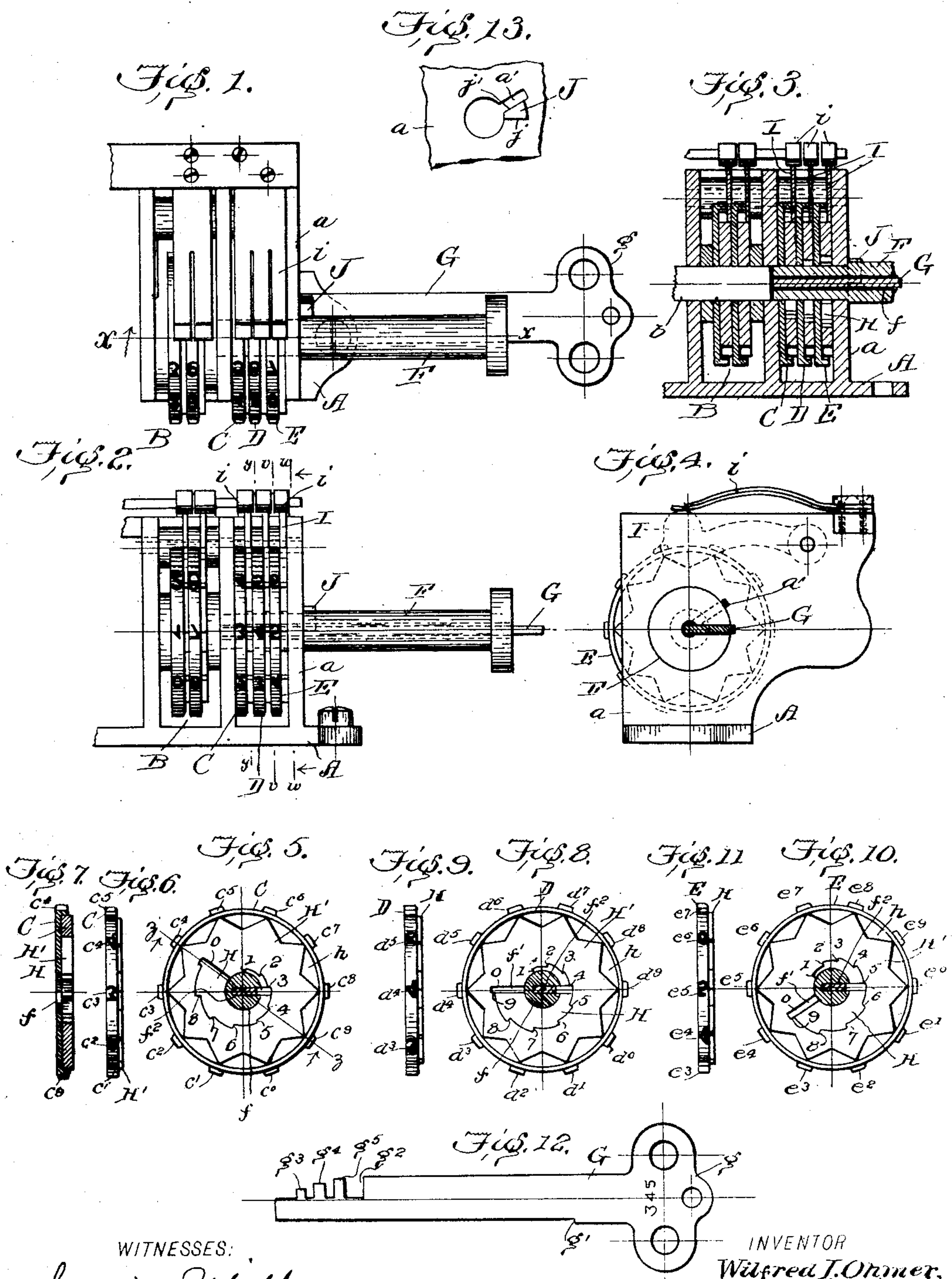


No. 797,598.

PATENTED AUG. 22, 1905.

W. I. OHMER.  
IDENTIFYING MEANS FOR RECORDERS.  
APPLICATION FILED AUG. 10, 1904.



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## IDENTIFYING MEANS FOR RECORDERS.

No. 797,598.

Specification of Letters Patent.

Patented Aug. 22, 1905.

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*To all whom it may concern:*

Be it known that I, WILFRED I. OHMER, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Identifying Means for Recorders, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to identifying means for recorders, or, in other words, means whereby the person taking a record makes, as a part of the record, an identifying-mark which shows by whom the record was taken.

The present invention, while generally applicable, is particularly devised for use in connection with that class of recorders known as "fare-registers," embodying printing-counters and printing mechanism whereby a record may be taken from said counters, said mechanism being controlled by a key which serves both to unlock said mechanism and to identify the operator, such a structure being shown, for instance, in Letters Patent No. 764,494, granted to me July 5, 1904.

It is the object of my present invention to provide a simple and effective mechanism in which the printing characters of the identifying device are carried by wheels which form a permanent part of the recorder, said wheels being directly operated by means of a separate key, both the key and the wheels being provided with coöperative selective devices, the rotation of the key after it is inserted causing its selective devices to directly engage those of the wheels to turn a predetermined set of printing characters to printing position.

To these and other ends my invention consists in certain novel features, which I will now proceed to describe and will then particularly point out in the claims.

In the accompanying drawings, Figure 1 is a plan view of a structure embodying my invention in one form. Fig. 2 is a front elevation of the same, a portion of the key being broken away. Fig. 3 is a vertical sectional view taken on the line  $xx$  of Fig. 1 and looking in the direction of the arrows. Fig. 4 is an end elevation of what is shown in Fig. 3. Fig. 5 is a detail sectional view taken on the line  $yy$  of Fig. 2 and looking in the direction of the arrows, the supporting-frame, detent-pawls, and springs being omitted. Fig. 6 is

an elevation of the printing-wheel shown in Fig. 5. Fig. 7 is a sectional view of the same, taken on the line  $zz$  of Fig. 5. Fig. 8 is a sectional view similar to Fig. 5, but taken on the line  $vv$  of Fig. 2. Fig. 9 is an edge view or elevation of the printing-wheel shown in Fig. 8. Fig. 10 is a detail sectional view similar to Figs. 5 and 8, but taken on the line  $ww$  of Fig. 2. Fig. 11 is an edge view or front elevation of the printing-wheel shown in Fig. 10. Fig. 12 is an elevation of the key detached, and Fig. 13 is a detail elevation showing the key-stop.

In the said drawings, in which I have shown one embodiment of my invention, A indicates a supporting-frame, which is preferably the supporting-frame in which are mounted the printing-counters B of a combined register and recorder—such, for instance, as is disclosed in my prior Letters Patent hereinbefore mentioned, the shaft on which said printing-counters are mounted being indicated by the reference-letter  $b$  and only one of said printing-counters being shown. Within said supporting-frame A are mounted printing-wheels, each having on its periphery a plurality or series of printing characters. In the present instance I have shown three of these printing-wheels as constituting this portion of the device; but their number may be varied, as desired. These wheels are indicated, respectively, by the reference-letters C, D, and E, constituting in the present instance the hundreds, tens, and units wheels, since the identifying characters chosen for purposes of illustration are numerals, which are preferred. In this construction each wheel has upon its periphery a series of printing characters from "0" to "9," or ten in all. In the case of the printing-wheel C these characters are indicated by the reference characters from  $c^0$  to  $c^9$ , inclusive, in the case of the printing-wheel D by the characters from  $d^0$  to  $d^9$ , inclusive, and in the case of the printing-wheel E by the characters from  $e^0$  to  $e^9$ , inclusive. These printing-wheels are suitably supported so as to be capable of rotating, preferably around an axis in line with the shaft  $b$ , and are so arranged that any of the printing characters thereon may be brought into printing position in alinement with the printing characters of the printing-counter B. For this purpose I prefer to em-



ploy a shaft F, mounted in the frame or support A, so as to rotate therein and having mounted on it between the uprights  $a$  of said frame A the printing-wheels C, D, and E. Each of the printing-wheels is provided with a central opening  $f$  to receive the shaft F, and each of said printing-wheels, except the one farthest from the end at which the key is inserted, is provided with a slot  $f'$  of a size sufficient to permit the free passage of the key. The shaft F also forms a barrel or hub to receive the key and to that end is provided with a longitudinal slot or recess  $f^2$ , forming a way or guide for the key which is indicated by the reference-letter G. The key in this form of construction has a flat body to fit the recess  $f^2$  and is of a width such as to project outward beyond the same and beyond the barrel or hub  $f$ . When the printing-wheels are so turned that their slots  $f'$  are in alinement with the slot or recess  $f^2$  and with each other and also with the slot  $a'$  in the end wall  $a$  of the frame or support A, then the key G can be inserted into the barrel and through the printing-wheels in the position shown in the several figures of the drawings. The key is provided with a suitable head  $g$  and with a stop-shoulder  $g'$ , which by its contact with the end of the barrel F limits the inward motion of the key. The key is further provided with a notch or cut-away portion  $g^2$  of a width sufficient to receive the upright frame member  $a$ , and thus permit the key to turn when fully inserted, while preventing its turning when not thus fully inserted. In addition to this notch  $g^2$  the key is provided with selective projections corresponding in number to the printing-wheels, three being shown in the present instance and indicated by the reference characters  $g^3$ ,  $g^4$ , and  $g^5$ . These projections are of different length for different identifying characters, and in the present instance the number "345" has been chosen as the identifying character for the particular key illustrated, the projection  $g^3$  being adapted to turn the printing-wheel C so as to present the numeral "3" in printing position, while the projections  $g^4$  and  $g^5$  are respectively adapted to so turn the printing-wheels D and E as to present the numbers "4" and "5" in printing position. To this end each printing-wheel is provided with a series of stop-shoulders or selective projections arranged at successively-increasing distances from the wheel center, the key projections working in the spaces between the printing-wheels and turning until they engage with the particular stop-shoulder with which they are designed to cooperate. My preferred form of construction to this end is that shown in which each printing-wheel is provided in one face with a recess H, the peripheral wall of which has a series of stop-shoulders designated by the numerals from 1 to 9, inclusive, and adapted to be engaged by the movement of the key in

one direction, said wall also being provided with a stop-shoulder indicated by the character "0" and adapted to be engaged by the key projection when moving in the opposite direction. As a simple and effective means for facilitating the construction of these parts I prefer to form each printing-wheel in two parts, the one consisting of the body of the wheel carrying the printing characters, said body being recessed at one side to form a seat to receive a supplemental member H', which is suitably secured to said body in said seat and which has the recess H formed in it by cutting entirely through said supplemental member H', by which means the said recess may be readily formed before the parts are assembled. Suitable detent devices are employed to hold the printing-wheels in the position to which they may be moved, and as a simple and efficient means for effecting this result I prefer to make the member H' project laterally beyond the body of the wheel, as shown more particularly in Figs. 6 and 7, and provide the periphery of said member H' with a number of notches  $h$ , corresponding to the number of stop-shoulders and printing characters on the wheel. A corresponding number of detent-pawls I are employed, one for each printing-wheel, and held in engagement with the notches  $h$  by means of springs  $i$ . The rotation of the key is limited by means of a stop J, preferably formed on the outer face of the frame member  $a$ , immediately adjacent to the slot  $a'$  therein, said stop having upper and lower contact-surfaces  $j$  and  $j'$ , respectively, with which the body of the key comes into contact to limit its motion in each direction.

The structure thus organized is normally in such a position that the printing characters "0" of each printing-wheel are in printing position, and the slots  $f'$  of the several printing-wheels provided therewith are in line with the key-slot  $a'$  of the frame or support A. When the parts are in this position, the key G may be inserted by sliding it along the groove or keyway  $f^2$  in the barrel or shaft F until the shoulder  $g'$  comes into contact with the outer end of the barrel. When the key has been thus far inserted, the projection  $g^3$  lies in the recess H of the printing-wheel C, and the projections  $g^4$  and  $g^5$  lie in the corresponding recesses of the printing-wheels D and E. The notch  $g^2$  of the key then registers with the frame A in such a way as to permit the key to be turned. The key is then turned away from the stop J, the barrel or shaft F turning with it and the printing-wheels remaining stationary until the longest projection of the key engages with the corresponding stop-shoulder of the corresponding printing-wheel. In the present instance the projection  $g^5$  will first engage the stop-shoulder or projection 5 of the printing-wheel E, and said printing-wheel will begin to rotate and



continue its rotation throughout the remaining setting movement of the key. The projection  $g^4$  next engages with the stop-shoulder 4 of the printing-wheel D, and the projection  $g^3$  finally engages with the stop-shoulder 3 of the printing-wheel C. The key, barrel, and printing-wheel then continue to turn until the key comes in contact with the lower stop-surface  $j'$  of the stop J, whereupon the printing characters "3," "4," and "5" will be in printing position. Any record taken from the printing-counters of the register or recorder will have impressed upon it the numeral "345" and will show that the person taking the record is the person provided with the corresponding key. The key is locked in position in the device and can only be removed by turning the key backward until it comes into contact with the upper stop-surface  $j$  of the stop J, in which position it is in alinement with the key-slot  $a'$  of the support or casing. During this return movement of the key its projections successively come into contact with the stop-shoulders or terminal walls O of the several printing-wheels, thereby bringing them all back to their original position, with the characters "0" in printing position and with the slots  $f'$  in alinement with the slot  $a'$ , thus permitting the removal of the key, which can only be removed when the printing characters are in this original position and can only be inserted when the parts are in said position.

It will at once be seen that by varying the length of the projections on the key the several printing-wheels may be set to print any desired combination of the characters which they bear when the key has been given one full revolution. It will also be seen that the printing-wheels of any register or recorder form a permanent part thereof and are adapted to be operated by any key constructed in accordance with the system, always responding to the particular key used by moving the corresponding printing characters into printing position.

From an inspection of Fig. 12 of the drawings it will be seen that the key there shown has stamped upon its head the number which the device will print when said key is used; but this is not essential, since one of the advantages of my present construction is that where the number or character is not thus indicated on the key there is no clue to be gathered from the key itself as to the identifying character which said key will produce. It follows from this that the operator may be kept in entire ignorance of the identifying character which he produces upon the record, which is frequently desirable as a means for preventing fraud. Where the key which is in possession of the operator bears upon itself the identifying character, it is of course impossible to prevent the operator from knowing what that character is. In practice it is possible to stamp or mark upon the keys numbers or

other characters by which they may be kept track of, while the identifying characters which said keys produce may be entirely different, but perfectly distinctive. It will be understood, of course, that the characters upon the printing-wheels need not be numerals, that any desired number may be employed upon each wheel, and that any desired number of wheels may be used.

One of the main advantages of the structure is that the printing-wheels being permanently mounted in the machine can be firmly supported and accurately alined, so as to insure a perfect impression of the identifying characters. A further advantage arises from the fact that the movements of the key are usually employed not only for the purpose of getting the identifying characters into proper printing position, but also for unlocking or otherwise controlling the movements of other parts of the register or recorder. Where the key movement is a mere longitudinal sliding movement, as in the construction usually employed, the movement of the part actuated by the key to produce these other results is necessarily limited both in range and power. Where the key is given a complete rotation, as in the structure embodying my invention, it is obvious that a much wider and more powerful range of movement can be obtained for these auxiliary purposes.

I do not wish to be understood as limiting myself to the precise details of construction hereinbefore described, and shown in the accompanying drawings, as the same may be modified without departing from the principle of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An identifying means for recorders, &c., comprising a plurality of printing-wheels having peripheral printing characters, recesses in said wheels, the peripheral walls whereof have a series of stop-shoulders to be engaged by the key in one direction and a terminal stop-shoulder to be engaged by the key in the other direction, a key provided with selective projections, one for each printing-wheel, to engage said shoulders, and means for limiting the rotation of the key in each direction, whereby full rotation of said key in one direction sets the corresponding characters in printing position and full rotation of the key in the other direction returns all of the wheels to their normal position, substantially as described.

2. An identifying means for recorders, &c., comprising a plurality of printing-wheels provided with detents for holding them in adjusted position, said wheels having peripheral printing characters, said wheels being provided with recesses, the peripheral walls whereof have a series of stop-shoulders to be engaged by a key in one direction and a ter-



minal stop-shoulder to be engaged by the key in the other direction, a key provided with selective projections, one for each printing-wheel, to engage said shoulders, and means for limiting the rotation of the key in each direction, whereby full rotation of said key in one direction fixes the corresponding characters in printing position and full rotation of the key in the other direction positively returns all of the wheels to their normal position, substantially as described.

3. An identifying means for recorders, &c., comprising a plurality of wheels provided with detents for holding them in adjusted position and having printing characters and corresponding selective projections, a separate key adapted to be inserted in said wheels and having selective projections to move predetermined characters to printing position when the key is turned in one direction and to positively return said wheels to a normal position when the key is turned in the other direction, and means for preventing the insertion or removal of said key except when the wheels are in normal position, substantially as described.

4. In an identifying device of the character described, the combination, with printing-wheels, and a removable key adapted to engage and control the same by its rotation, of a fixed part having a slot for the passage of the key, the key being provided with a corresponding notch to prevent rotation of the key except when said notch registers with said fixed part, substantially as described.

5. In an identifying device of the character described, a frame or support, a shaft or barrel rotatably mounted therein and having a slot or keyway, a plurality of printing-wheels mounted on said shaft or barrel in said frame or support and having peripheral printing characters and recesses provided with corresponding selective stop-shoulders, one of the terminal stop-shoulders being opposed to the remaining shoulders of each set, and a flat key fitting said keyway, provided with selective projections, one for the recess of each wheel, to engage the shoulders thereof, said wheels being slotted to permit the introduction of said key, substantially as described.

6. In an identifying device of the character described, a frame or support, a shaft or barrel rotatably mounted therein and having a slot or keyway, a plurality of printing-wheels mounted on said shaft or barrel in said frame or support and having peripheral printing characters and recesses provided with corresponding selective stop-shoulders, one of the

terminal stop-shoulders being opposed to the remaining shoulders of each set, and a flat key fitting said keyway, provided with selective projections, one for the recess of each wheel, to engage the shoulders thereof, said wheels being slotted to permit the introduction of said key, said frame or support being provided with a slot for the passage of the key, and said key being provided with a notch for the passage of the frame or support, whereby said key is permitted to rotate only when fully inserted, substantially as described.

7. In an identifying device of the character described, a frame or support, a shaft or barrel rotatably mounted therein and having a slot or keyway, a plurality of printing-wheels mounted on said shaft or barrel in said frame or support and having peripheral printing characters and recesses provided with corresponding selective stop-shoulders, one of the terminal stop-shoulders being opposed to the remaining shoulders of each set, and a flat key fitting said keyway, provided with selective projections, one for the recess of each wheel, to engage the shoulders thereof, said wheels being slotted to permit the introduction of said key, said frame or support being provided with a slot for the passage of the key, and said key being provided with a notch for the passage of the frame or support, whereby said key is permitted to rotate only when fully inserted, said frame or support being provided with a stop to limit the rotary movement of the key in each direction, substantially as described.

8. In an identifying device of the character described, a wheel composed of a body having peripheral printing characters, and a supplementary member seated in said body and having formed therethrough a recess, the wall whereof is provided with graduated stop-shoulders, substantially as described.

9. In an identifying device of the character described, a wheel composed of a body having peripheral printing characters, and a supplementary member seated in said body and having formed therethrough a recess, the wall whereof is provided with graduated stop-shoulders, said supplementary member projecting laterally beyond the body of the wheel and having detent-notches formed in its periphery, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILFRED I. OHMER.

Witnesses:

GUSTAV BECKER, Jr.,  
WM. H. KIMMEL.