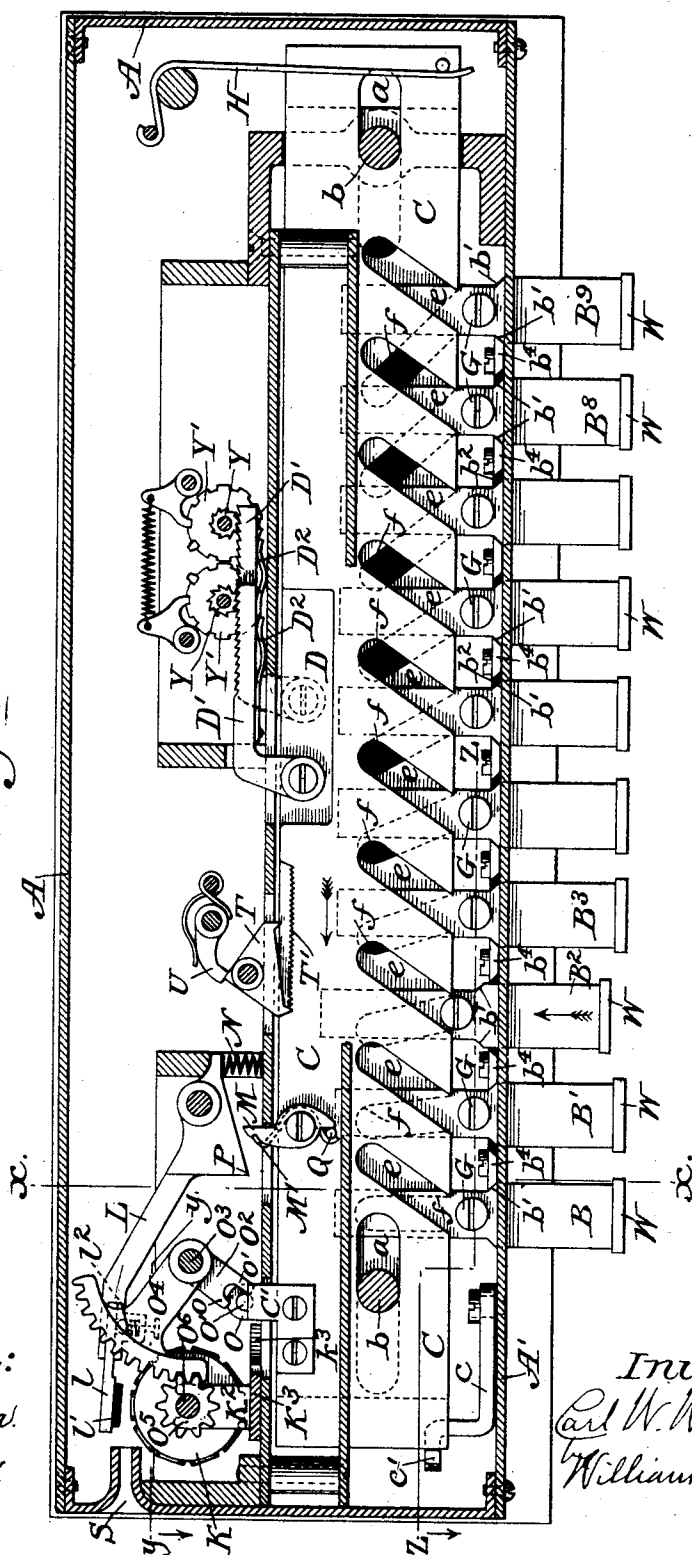


C. W. WEISS.
CHECK PRINTING AND ADDING MACHINE.

No. 481,709.

Patented Aug. 30, 1892.

Fig. 1.



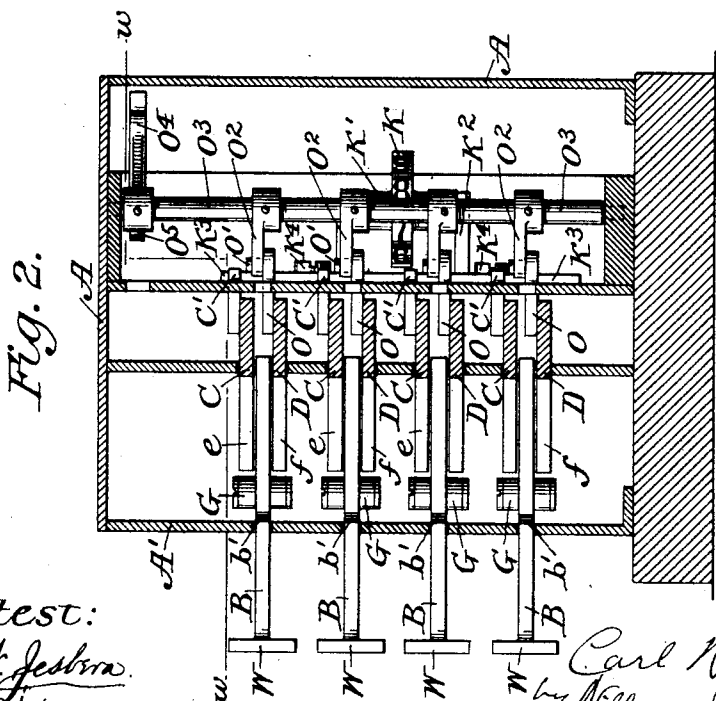
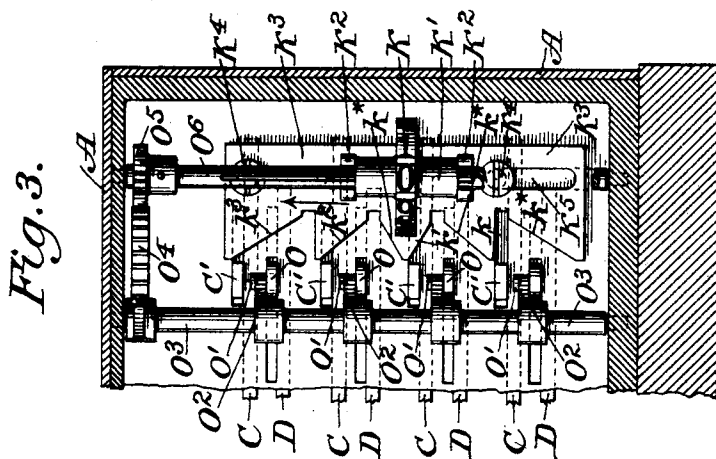
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Attest:
A. H. Jester
A. Thidder

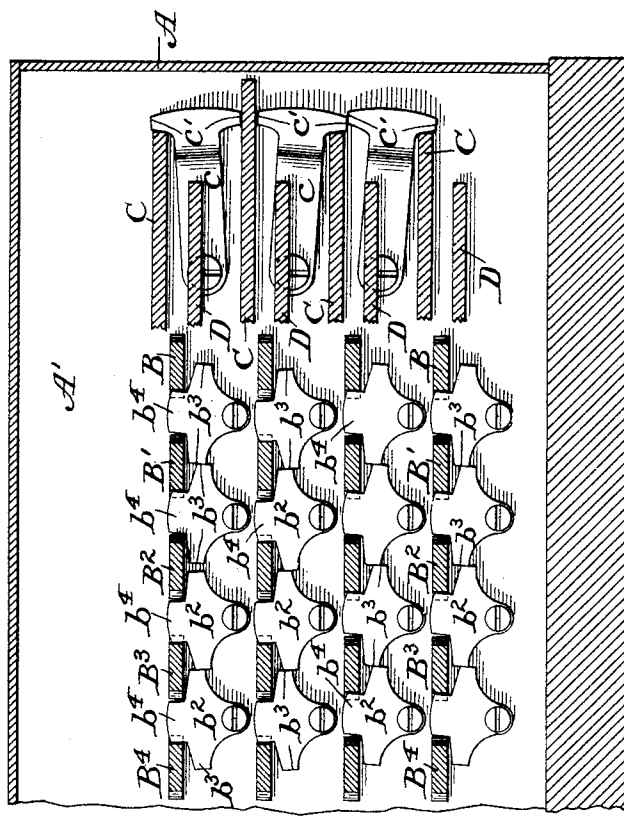
Inventor:
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CHECK PRINTING AND ADDING MACHINE.

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Fig. 4.



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UNITED STATES PATENT OFFICE.

CARL W. WEISS, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE KRUSE
CASH REGISTER COMPANY.

CHECK PRINTING AND ADDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 481,709, dated August 30, 1892.

Application filed September 9, 1891. Serial No. 405,184. (No model.)

To all whom it may concern:

Be it known that I, CARL W. WEISS, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Check Printing and Adding Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates particularly to key-operated machines of the type shown in Letters Patent of the United States granted to me August 25, 1891, and numbered 458,203.

Its object is to simplify and improve the construction and operation of such machines, and especially to make one type-wheel do the work for two or more.

Certain of the novel features of the present machine, as will be observed, may be applied to machines of other types, although they are herein shown as applied to a particular construction.

In the accompanying drawings, Figure 1 is a horizontal section on the line *ww* of Fig. 2. Fig. 2 is a vertical cross-section on the line *xx* of Fig. 1. Fig. 3 is a vertical longitudinal section on the line *yy* of Fig. 1, looking from the rear of the machine; and Fig. 4 is a vertical longitudinal section on the line *zz* of Fig. 1, looking from the rear of the machine.

Similar letters indicate like parts in all the figures, and as far as possible the same letters have been used as in the specification and drawings of said Letters Patent to indicate corresponding parts.

The framework and casing *A* of the machine, the face-plate *A'*, and the keys *BB' B² B³*, &c., may be arranged substantially as shown in said patent, the keys of the lower row representing values by units or cents, the second in tens, the third units of dollars, and the fourth tens of dollars. Similarly two parallel bars *CD* for each row of keys are placed within the casing, being guided and limited in their movements by pins *b* and slots *a*, the bar *C* having a series of slots *e e*, equally inclined in one direction, and bar *D* having a series of slots *f f*, inclined in the opposite direction and severally inclined at different angles in regu-

larly-increasing progression from that corresponding to the cipher-key, which slot is at right angles to the length of the bar, to that of the highest denomination. In the present case, however, I prefer for convenience in construction to cause the inner ends of the keys in each row to pass between the two bars *C* and *D*, and the pin *G* in each key is made to project above and below the key in order to enter the slots and operate the bars as in said patent. The return of the bars to their normal position after operation is effected by springs *H H*. It need only be said, further, that when any key is pressed the bar *C* will be moved to the same extent that it would be moved by any other key in the row, while the bar *D* will be moved a unit-distance or some multiple thereof, except when the cipher-key is pressed, in which case it will not be moved at all.

Each lower bar *D* carries on a bracket *O* a pin *O'* for engagement with the notched end of a corresponding arm *O²*, fixed to a vertical shaft *O³*. The notch is formed by fingers *o* and *o'* of unequal length, as indicated, so that the arm may be free to move away from the pin, but shall always be moved by the pin when the bar *D* is actuated.

The shaft *O³* carries a gear-segment *O⁴*, which meshes with a pinion *O⁵*, fast on the shaft *O⁶*, which carries the type-wheel *K*. As the type-wheel bears type from "0" to "9," corresponding with the numbers upon the keys of each row, it will be rotated sufficiently to bring the proper type to the line of print whenever any key in any row is operated. The single type-wheel *K* serves for all of the several denominations represented by the different rows of keys. It is carried, preferably, by a sleeve *K'*, and by means of a feather and slot, as indicated in Fig. 3, is made to rotate with the shaft *O⁶*, while being free to be moved longitudinally thereon. The sleeve is held between lugs *K² K²*, projecting from a plate *K³*, which has a longitudinal movement limited and directed by pins *K⁴* and slots *K⁵*. The plate *K³* is formed on one edge with a horizontal notch or slot *k* and a series of differential inclines *k' k² k³*, and each bar *C* is provided with a projection *C'*, corresponding to and adapted to engage, when the bar is moved,

with said slot or with one of said inclines, as the case may be. If the lower bar C be actuated, the plate K³ will be so held as to keep the type-wheel in a position corresponding to that of units on the check to be printed, and if the second bar C be actuated its projection C' will co-operate with the incline k' to bring the type-wheel into a position corresponding to that of tens on the check. A corresponding result will be obtained by the operation of any other bar. An oppositely-placed incline k* is provided for the slot k and for each incline k' and k², so that the plate may be brought back to proper position should it have been previously moved by a key of a higher denomination. It will be seen readily that the plate is always brought to proper position without regard to the order in which the bars C are operated.

The hammer L is pivoted to drop under the action of the spring N upon the type-wheel after having been lifted away by the lifting-toe M, which is pivoted to the bar C, the arm of the hammer being formed with an acute projection P and the toe M being held in a yielding manner by a spring M' and provided with a stop Q, all as in said patent. Instead, however, of employing an ink-ribbon between the face of the type and the check, I fix to the hammer a hard ink-pad V', and by using checks of a suitable and not too excessive thickness I secure an imprint upon the reverse side of the check. The stem of the hammer is sufficiently elastic to permit the pad V' to strike the check under the influence of the momentum of the hammer and to cause the pad to spring back after the blow, that it may not rest upon the check. In order that this ink-pad may be removed readily for renewal, I fix it to a plate I, which enters a slot in the end of the arm of the hammer and is held in place therein by a spring-pin I². A suitable opening S is formed in the casing to permit of the insertion of a check.

As in said patent, a reverse movement of the bar C after it has commenced its stroke in either direction, is prevented by the double-toothed dog T, pivoted to engage with one or the other of its teeth a rack T' on the bar C and held in proper position by a spring-actuated detent U. The bar D is also geared to the pinion Y of an adding mechanism Y' by a pivoted rack-bar D', normally held lightly in engagement with the pinion by a spring D².

In order to prevent the operation of two or more keys in the same row simultaneously, I have provided means whereby the operation of one key in a row locks all the other keys in the same row against movement. The outer portion of each key is wider than the inner portion, and the shoulder between the two portions is preferably beveled, as shown at b'. On the line between each two adjacent keys is pivoted a stop-plate b², which has shoulders b³ below the line of the keys and a beveled head b⁴, which stands between the two adjacent keys. The stop-plates are so propor-

tioned that when any one key as B², is pressed in the wider portion of the key will enter between the heads of the two adjacent stop-plates and thrust them in opposite directions. Through the contact of the shoulders b³ of the several stop-plates all of the stop-plates on each side of the key operated will also be thrust in the same direction and held in their new positions so long as the key remains pressed in. The heads b⁴ will then stand in the way of the shoulders b' and all of the keys except the single one first pressed in will be locked against inward movement.

Since a single type-wheel is employed, it is also desirable to prevent the movement of two or more of the bars C or D at the same time. I have therefore provided means for locking all the other bars by the movement of one. To the inside of the face-plate or to some other convenient support I pivot a series of stop-plates c, having beveled shoulders c'. These are pivoted severally about midway between the bars C to swing in a plane transverse to the line of movement of the bars and in such position that the shoulders c' shall stand slightly beyond the ends of the bars. The forward movement of any one bar separates the two adjacent stop-plates and through the contact of the shoulders c' causes the said shoulders of all the other stop-plates to stand in the line of movement of the other bars C, thus locking them securely against movement until the first bar moved has been returned to its normal position. It is obvious that where two bars C are thus locked the bars D cannot be moved, and I have preferred to apply the stop-plates to the bars C, because if they were applied to the bars D the bars C might still be moved when the cipher-key is operated, by reason of the fact that the slot f corresponding to the cipher-key is perpendicular to the line of movement of the bar D.

In the operation of the machine if it be desired to obtain a check for one dollar and thirty-five cents, for example, a blank check having been inserted in the opening S, the key B' in the third or dollar row is first pressed in. This action moves the corresponding bar D to rotate the type-wheel to bring the numeral "1" to the line of print. At the same time the corresponding bar C is moved to shift the type-wheel into the proper position for dollars and at the last of its movement to operate the hammer L to imprint the "1" upon the check. The key being released, the parts are restored to normal position by the spring H and the key B³ in the dimes-row is operated, and in similar manner the type-wheel is rotated and shifted to bring the numeral "3" to the line of print and into the proper position for dimes. This imprint having been obtained, the key B⁵ in the lowermost row is operated and the imprint of the numeral "5" obtained in like manner. I have herein referred to the line of type as formed on the periphery of a wheel; but as this line of type is moved first in one direction and then in the

other in the line of its length it is obvious that it might be carried by a segmental or other block, to which an oscillating or reciprocating movement may be given to bring any one character to the line of print.

I claim as my invention—

1. The combination of a type-wheel having a single peripheral row of type characters, means to rotate said wheel, a series of keys, means intermediate each of said keys and wheel to shift the latter longitudinally, a platen extending over the line of movement of the wheel, and means to produce an impression at different points in the line of travel of the wheel, substantially as shown and described.

2. The combination of a type-wheel having a single peripheral row of type characters, a shaft with which said wheel rotates and on which it is free to be moved longitudinally, means to rotate the shaft, a series of keys, means intermediate each of said keys and wheel to shift the latter upon the shaft, a platen extending over the line of movement of the wheel, and means to produce an impression at different points in the line of travel of the wheel, substantially as shown and described.

3. The combination of a type-wheel having a single peripheral row of type characters, a shaft with which said wheel rotates and on which it is free to be moved longitudinally, means to rotate the shaft, a series of keys, a sliding plate adapted to carry the wheel with it, means intermediate said keys and plate to shift the latter, a platen extending over the line of movement of the wheel, and means to produce an impression at different points in the line of travel of the wheel, substantially as shown and described.

4. The combination of a type-wheel, a shaft with which said wheel rotates and on which it is free to be moved longitudinally, means to rotate the shaft, a series of keys, a sliding plate adapted to carry the wheel with it and formed with an incline, and means actuated by said keys to co-operate with said incline and shift the plate, substantially as shown and described.

5. The combination of a type-wheel, a shaft with which said wheel rotates and on which it is free to be moved longitudinally, means to rotate the shaft, a series of keys, a sliding plate adapted to carry the wheel with it and formed with an incline, and a sliding bar adapted to co-operate with said incline to shift the plate and to be moved by said keys, substantially as shown and described.

6. The combination of a type-block movable in a plane parallel with its face and bearing

a single line of type characters, a series of keys, means intermediate each of said keys and type-block to shift the latter in the plane of its movement and at a right angle to the line of type characters, a platen extending over the line of movement of the type, and means to produce an impression at different points in the line of travel of the type, substantially as shown and described.

7. The combination of a type-block movable upon bearings parallel with its face and having a single line of type characters, a sliding plate adapted to carry said type-block with it, a series of keys, means intermediate said keys and plate to shift the latter, a platen extending over the line of movement of the type, and means to produce an impression at different points in the line of travel of the type, substantially as shown and described.

8. The combination of a type-wheel, a shaft with which it rotates, a series of rows of keys, a series of swinging arms corresponding to said rows of keys, means intermediate said arms and shaft to rotate the latter, a series of sliding bars adapted to engage said arms, and means intermediate said rows of keys and the corresponding bars to shift the latter, substantially as shown and described.

9. The combination of a type-wheel, a shaft with which it rotates, a series of sliding bars, a series of swinging arms having notches with which said bars are adapted to engage, means to move said bars, and means intermediate said arms and shaft to rotate the latter, substantially as shown and described.

10. The combination of a type-wheel, a shaft carrying said wheel, a second shaft, gearing intermediate said shafts, a series of arms upon said second shaft, a series of rows of keys, and means actuated by said keys and adapted to engage said arms, substantially as shown and described.

11. The combination, with a type-wheel, a series of bars movable longitudinally, and means intermediate said bars and wheel to rotate the wheel, of a series of stop-plates severally pivoted between said bars and formed with shoulders adapted to stand in the path of movement of said bars and to contact with corresponding shoulders of adjacent stop-plates, and a series of rows of keys, and intermediate means to shift said bars, substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CARL W. WEISS.

Witnesses:

A. N. JESBERA,
A. WIDDER.