E. SINNER.

CASH REGISTER.

APPLICATION FILED JULY 28, 1911.

1,068,012.

Patented July 22, 1913.

2 SHEETS—SHEET 1.

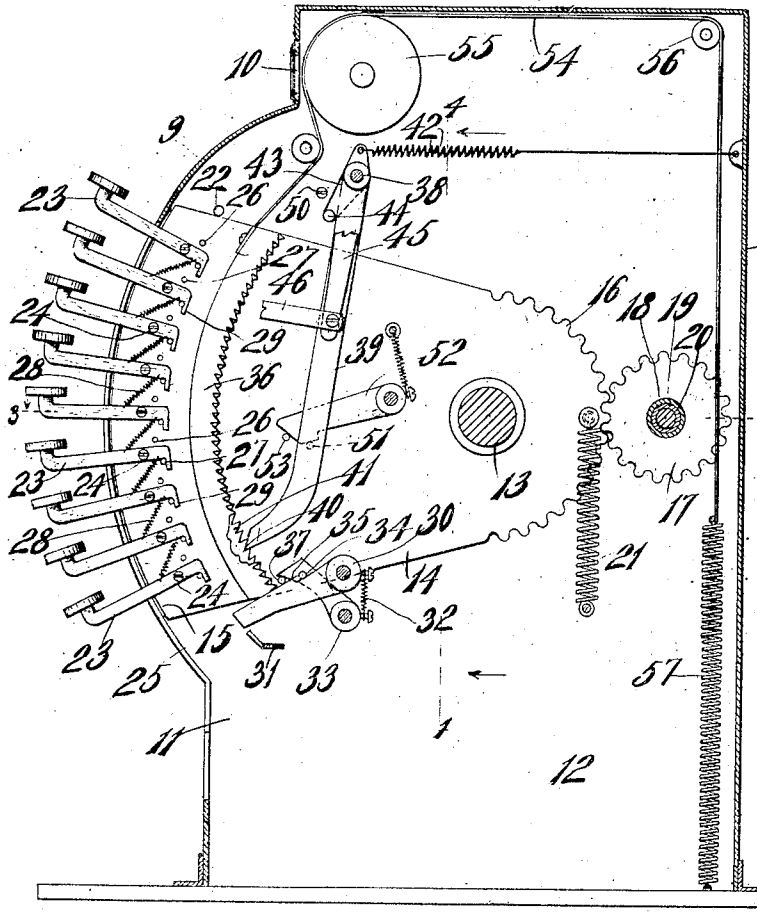


FIG. 1.

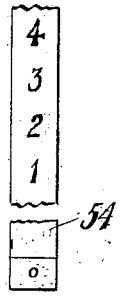


FIG. 5

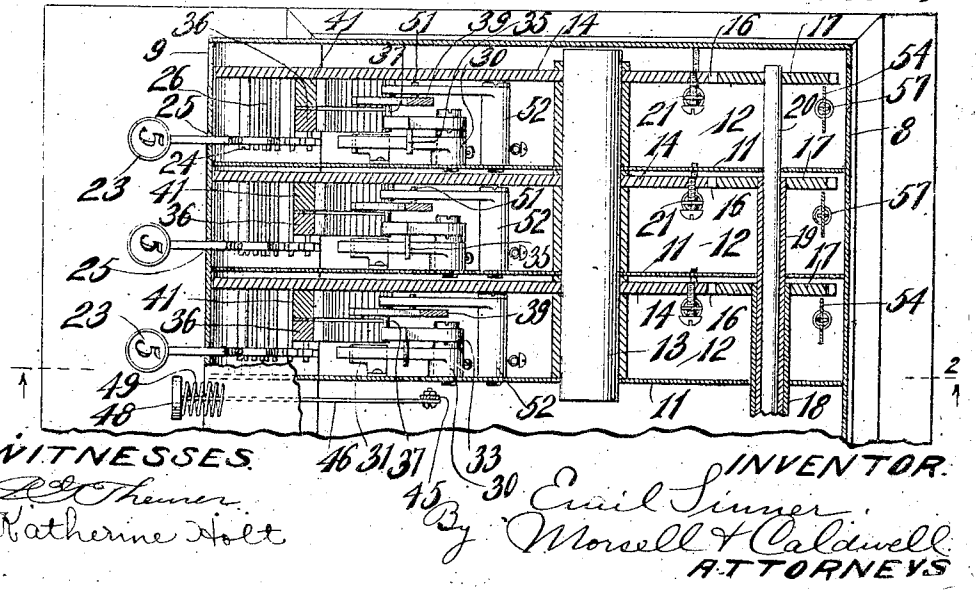


FIG. 3.

WITNESSES.

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2 SHEETS—SHEET 2.

FIG. 2.

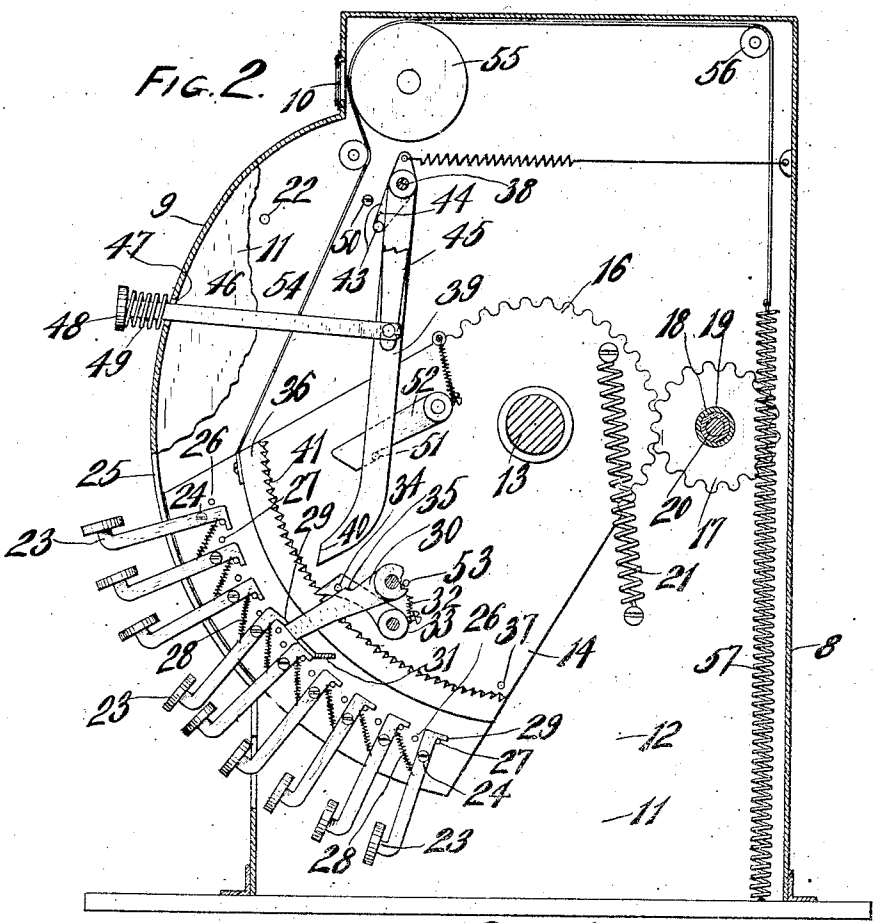
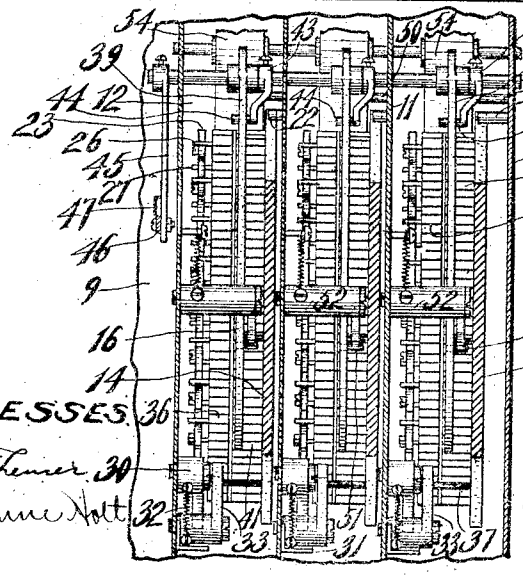


FIG. 4.



WITNESSES.

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UNITED STATES PATENT OFFICE.

EMIL SINNER, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO THE LA SALLE COMPANY, OF MILWAUKEE, WISCONSIN, A CORPORATION OF WISCONSIN.

CASH-REGISTER.

REISSUED

1,068,012. Specification of Letters Patent. Patented July 22, 1913.

Application filed July 28, 1911. Serial No. 640,980.

To all whom it may concern:

Be it known that I, EMIL SINNER, a subject of the Emperor of Germany, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Cash-Registers, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

This invention relates to improvements in cash registers adapted to indicate and register the amount of each purchase and more particularly to the key board and connected mechanism.

It is one of the objects of this invention to provide a cash register in which the keyboard and connected mechanism is of simple construction, strong and durable and not liable to get out of order.

A further object of the invention is to provide a cash register in which the keys are locked in adjusted position to display the amount of purchase until released by operating a key.

With the above, and other objects in view, the invention consists of the improved cash register and its parts and combinations as set forth in the claims, and all equivalents thereof.

In the accompanying drawings in which the same reference characters indicate the same parts in all of the views: Figure 1 is a vertical transverse sectional view of the cash register taken on line 1—2 of Fig. 3, a part broken away to show another part in the rear thereof; Fig. 2 is a similar view thereof with the parts in indicating positions; Fig. 3 is a horizontal sectional view of one end portion of the cash register taken on line 3—3 of Fig. 1; Fig. 4 is a vertical longitudinal sectional view thereof taken on line 4—4 of Fig. 1 and, Fig. 5 is a detail view of a portion of one of the indicating strips.

Referring to the drawings the numeral 8 indicates the rectangular casing which is provided with a curved front portion 9 and with indicator openings 10. Partitions 11 dividing the casing longitudinally into a plurality of key compartments 12 have extended therethrough a fixed horizontal shaft 13. The axial line of the shaft corresponds to the axis of the curve of the front portion of the casing and segmental members 14 journaled on said shaft project forwardly therefrom to points adjacent to the curved front and have their forward edges 15 correspondingly curved. The rearwardly extending edges of these members are semi-circular in shape and are provided with teeth forming half gears 16 which mesh with registering pinions 17. Pinions 17 are independently mounted on sleeves 18 and 19 and on a small shaft 20 and the sleeve 18 is partly telescoped over the sleeve 19 and the sleeve 19 in turn is partly telescoped over the shaft 20 to provide for conveying the partial rotations of the different pinions to the registering mechanism (not shown) in the ordinary manner. Coiled springs 21 connected to the half geared portions of the members and to the partitions 11 serve to normally hold the forward portions of the said members in their uppermost positions and against the stop pins 22 which project from the partitions.

Each segmental member carries nine keys indicated by the numeral 23 which are numbered in consecutive order, beginning at the top, from one to nine inclusive. These keys are pivoted to the sides of and near the outer peripheries of the members by screws 24 and extend radially outwardly from said members and through elongated slots 25 provided in the curved front portion of the casing.

Stop pins 26 and 27 projecting from the sides of the segmental members and positioned respectively above and below the inner ends of each key are adapted to permit a limited downward movement of each key before the particular segmental member is moved to which the keys are connected.

Coiled springs 28 connected to the forward portion of each key and to the inner portion of each key immediately thereabove tends to hold the inner ends of said keys against the stop pins 27. The keys are spaced an equal distance apart circumferentially and are provided with downwardly projecting fingers 29 which are adapted to be swung inwardly to a position to engage the free ends of stop levers 30 which are pivoted to the casing partitions. These stop levers are positioned below the lowermost keys when said keys are in their uppermost positions and their free ends are held yieldingly a slight distance above stop brackets 31 also fastened to the partitions. Coiled

springs 32 connected to the hubs of the stop levers and to the hubs of pawls 33 normally hold the stop levers spaced from the stop brackets. The pawls 33 are also pivoted to the partitions and are provided with laterally extending pins 34 which engage shoulders 35 formed on the stop levers and serve to prevent said stop levers from swinging upwardly and the pawls from swinging forwardly. These pawls 33 when released from the shoulders are adapted to swing forwardly and engage the teeth of segmental ratchet bars 36 fastened to the sides of the segmental members and prevent the segmental members from swinging farther downward. The segmental members are also provided with projecting pins 37 which extend from the lower portions of the said members and are positioned to swing the pawls 33 rearwardly out of engagement with the segmental bars and into engagement with the shoulders 35 of the pawls and lock said pawls in said positions when the segmental members are swung upwardly.

In order to provide for holding the segmental members temporarily in the positions to which they have been moved a shaft 38 extending longitudinally above the segmental arms has mounted loosely thereon depending arms 39 which extend alongside of the segmental members and their lower ends 40 are curved forwardly and formed in the shape of teeth which normally engage the teeth of segmental ratchet bars 41 fastened to the segmental members and interposed between the said members and the rack bars 36. Springs 42 connected to the upper ends of these arms and to the casing hold the said arms yieldingly in engagement with the ratchet bars and short arms 43 rigidly connected to the shaft 38 are provided with horizontal projections 44 which extend in front of the depending arms and swing the arms out of engagement with the ratchet bars when the shaft is turned. A shaft arm 45 rigidly mounted on the shaft has a releasing key 46 connected to the lower end of said arm which extends through an opening 47 in the casing is provided with a head 48. A coiled spring 49 interposed between the head and the casing holds the short arms 43 against the stops 50 to permit the depending arms to independently engage their respective ratchets and the releasing key serves to disengage said depending arms from the ratchet bars when the said key is pressed inwardly.

The two ratchet bars carried by each segmental member have their respective teeth inclined in opposite directions to properly coöperate with the pawls and the depending arms.

When the segmental members have been moved to indicating positions and it is desired to release the said members, the releasing key is pressed inwardly to accomplish this result as before stated and in order to momentarily hold the releasing key in its inner position, the depending arms 39 are provided with projecting pins 51 which are engaged by the shoulders of the spring retrieved latches 52 pivoted to the partitions 11. The forward free ends of these latches rest on top of the pins and when the depending arms are swung inwardly, the latches will snap over the pins and hold the arms in disengaged positions until released by means of releasing pins 53 which are carried by the segmental members and which engage and lift the latches when the said members swing to their uppermost positions.

To provide a visible indication of the amount registered each segmental member has connected to the upper portion thereof the end of a tape 54 which extends from said member upwardly and over idle rollers 55 and 56 and then downwardly and is connected to the upper end of a coiled spring 57 the lower end of which is connected to the bottom portion of the casing. These tapes each have the numerals from one to nine inclusive printed thereon and arranged in consecutive order and positioned to show the proper numbers through the indicator openings 10 that have been registered on the keys.

In the form of the register shown in the drawings but three lines or banks of keys are indicated but it is to be understood that the invention contemplates a register provided with any number of keys.

In operation when one of the keys is depressed it will first swing downwardly on its pivot until its rear end engages one of the stop pins. In this position the downwardly extending finger will have swung rearwardly and a further pressure on the key will force the segmental member downwardly until the finger strikes the stop lever and it in turn strikes the stop bracket. This movement will pull on the tape and indicate the number of the key depressed and the segmental member will turn one of the registering pinions to register the amount. The stop lever in swinging on its pivot will move its pawl into engagement with the ratchet bar of the respective member and prevent further downward movement of said member. At the same time the lower end of the depending arm will engage the other ratchet bar on said member and lock the member in depressed position. Other keys may now be depressed in the same manner and when the desired amount is indicated, the releasing key is pressed inwardly to release all of the registering keys and they will swing back to their original positions. In swinging back the depending arms will be released from their respective latches and again engage the rack bars.

From the foregoing description it will be seen that the register is very simple in construction and operation and is well adapted for the purpose desired.

What I claim as new and desire to secure by Letters Patent is:

1. A cash register, comprising a plurality of segmental movable members provided with ratchet bars, a plurality of keys pivoted to the members and having a movement preliminary to the movement of the members, pawl mechanisms engaged by the keys to cause them to engage the ratchet bars, stops engaged by the pawl mechanisms for limiting the movements of the members, and arms yieldingly engaging the members for preventing a return movement of the said members before the movements are completed and also for temporarily holding the members at the ends of their movements.

2. A cash register, comprising a plurality of pivoted segmental members provided with ratchet bars, a plurality of keys pivoted to each member and each key having a movement preliminary to the movement of the member to which it is connected, stops for limiting the movement of said keys with relation to the members, pawl mechanisms engaged by the keys to cause them to engage the ratchet bars, stops engaged by the pawl mechanisms for limiting the movements of the members, pivoted arms engaging the ratchet bars, means for simultaneously moving all of the arms out of engagement with the ratchet bars, means for locking said arms in ratchet disengaging positions, and means for automatically releasing the arms from locked positions.

3. A cash register, comprising a plurality of pivoted segmental members provided with ratchet bars, a plurality of keys pivoted to each member and each key having a movement preliminary to the movement of the member to which it is connected, stops for limiting the movement of said keys with relation to the members, pawl mechanisms engaged by the keys to cause them to engage the ratchet bars, stops engaged by the pawl mechanisms for limiting the movements of the members, pivoted arms yieldingly and independently engaging the ratchet bars, a shaft on which said arms are pivoted, short arms carried by the shaft for engaging all of the pivoted arms simultaneously, a key for rocking said shaft, latches for locking said pivoted arms in ratchet disengaging positions, and means for automatically releasing the arms from locked positions when the members are swung to their normal positions.

4. A cash register, comprising a plurality of pivoted segmental members provided with segmental ratchet bars positioned concentrically with relation to the axial line of the pivoted connection of the members, a plurality of keys pivoted to each segmental member and having their pivoted connections arranged in an arc which is also concentric with relation to the axial line, said keys having projecting fingers, stops for limiting the movement of the keys independently of the movements of the segmental members, stop brackets, pawl mechanisms adapted to be engaged by keys which are depressed to move the pawls into engagement with the ratchet bars and other parts of the pawl mechanism into engagement with the stop brackets, a rock shaft provided with short arms, depending arms loosely mounted on the shaft and having their lower ends engaging the ratchet bars, spring means for yieldingly holding the depending arms in engagement with the ratchet bars, a releasing key connected to the rock shaft for causing the short arms to move the depending arms out of engagement with the ratchet bars, latches for locking the depending arms in ratchet disengaging positions, and projections carried by the segmental arms for automatically releasing said arms from said latches.

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

EMIL SINNER.

Witnesses:
R. S. C. CALDWELL,
KATHERINE HOLT.