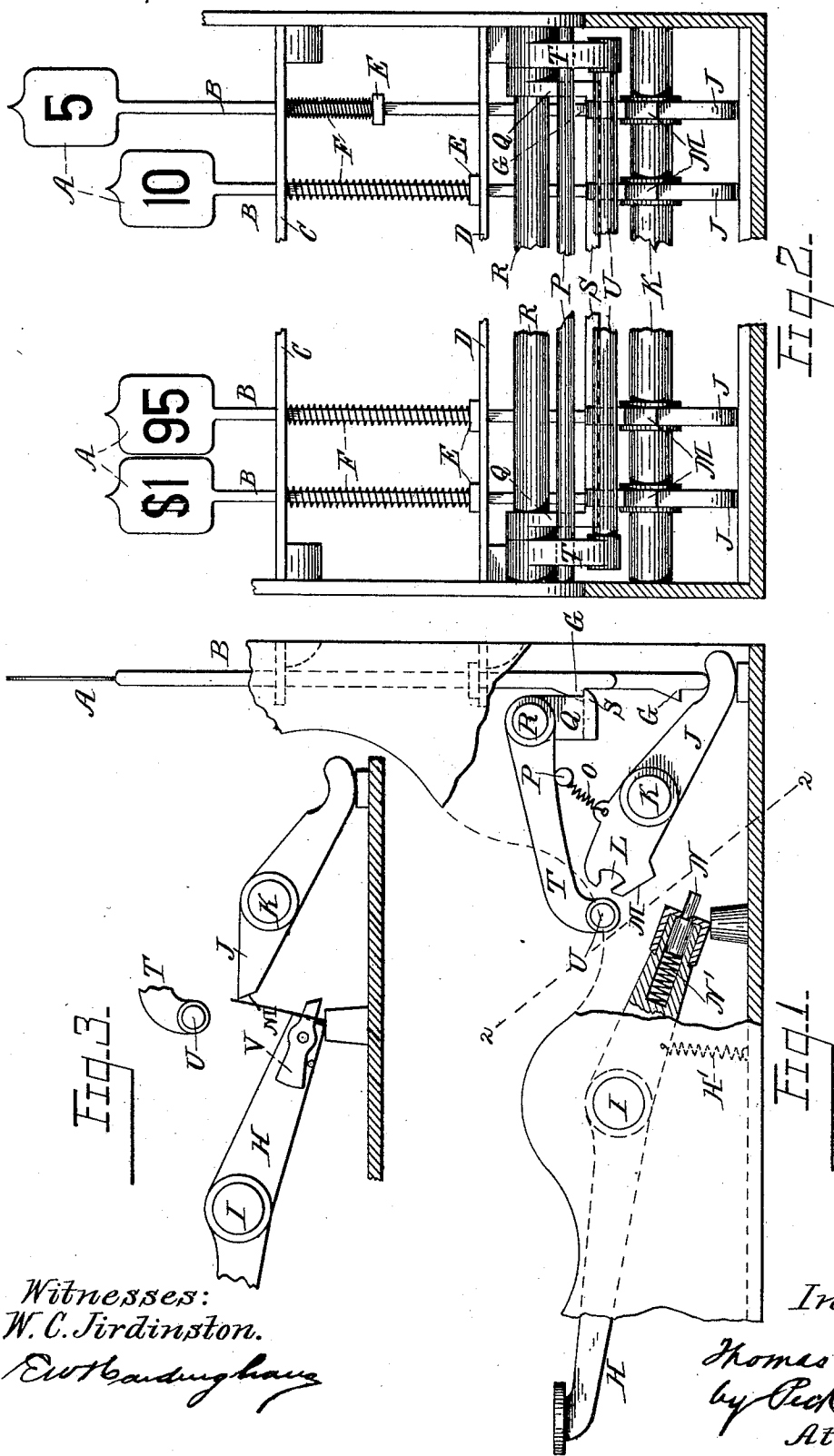


(No Model.)

T. CARNEY.
CASH REGISTER AND INDICATOR.

No. 507,351.

Patented Oct. 24, 1893.



Witnesses:
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UNITED STATES PATENT OFFICE.

THOMAS CARNEY, OF DAYTON, OHIO, ASSIGNOR TO THE NATIONAL CASH REGISTER COMPANY, OF SAME PLACE.

CASH REGISTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 507,351, dated October 21, 1893.

Application filed February 24, 1892. Serial No. 422,673. (No model.)

To all whom it may concern:

Be it known that I, THOMAS CARNEY, 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 Cash Registers and Indicators, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

Heretofore, in machines of this character which have employed a series of indicators or tablets representing the respective amounts to be indicated and registered, and a series of key-levers representing corresponding amounts, the indicators have usually been thrown into view, to make the indications, by the depression of the front ends of the key-levers and have been caught and held in view by some suitable supporting device when the key levers were released and re-set to normal position. Upon the operation of another lever the exposed indicator would be released and withdrawn from view, while the indicator corresponding to the newly operated lever would be lifted into view and held up by the supporting device.

In my improved machine the indicators are not lifted into view upon the depression of the front ends of the key-levers, as heretofore, but upon the re-setting of the keys and consequent lifting of their front ends and lowering of their rear ends, the result being that when the front end of any key-lever is depressed its corresponding indicator remains out of sight until the lever is released, and then, as the lever returns to normal position, the indicator is lifted into view.

In the accompanying drawings Figure 1 represents a side elevation of the frame and indicating mechanism of a cash register, illustrating one method in which my new mode of operation may be carried out, a portion of the rear side of the framework being broken away to expose the parts beyond it. Fig. 2 is a front elevation of the right and left hand sides of the machine, (the middle portion being broken away,) showing only that part of the machine which is in rear of the line 2—2 of Fig. 1. Fig. 3 is a detail view showing a modified form of connecting device between the key levers and lifting levers.

The same letters of reference are used to indicate identical parts in all the figures.

The indicators A are supported upon vertical rods B carried in guides C D, the rods preferably being provided with collars E resting upon the lower guide D. To aid in re-setting the indicators the rods B may be surrounded by spiral springs F confined between the collars E and upper guide C. These springs will be compressed when the rods B are lifted and will assist the gravity of the rods and indicators in re-setting the latter when released.

Upon the forward sides of the rods B are formed or secured beveled projections or shoulders G which co-operate with a supporting bar to temporarily sustain the rods B in elevated position, with their indicators exposed, as will be hereinafter described.

The key-levers H are strung upon a horizontal shaft I near the front of the machine as usual, and have spiral springs H' connected to them in rear of their pivotal support, to aid in re-setting them. The respective key levers are arranged approximately in line with the respective indicator rods B which correspond to them, and interposed between the rear end of each lever and its corresponding rod is a lever J, upon whose rear end the rod rests. These levers J are strung upon a horizontal shaft K. The front end of each lever is provided with a notch or mouth L and a beveled face M, which co-operate with a spring-plug N carried in a bore in the rear end of the corresponding key-lever. The plugs N are normally pressed outward by springs N' confined in the bores behind them and may be forced inward against the pressure of the springs. When the front end of any key-lever is depressed and its rear end thereby lifted the rear end of the plug N strikes the beveled face M of the lever J and the plug is forced into its housing as its rear end rides up over said face. When the end of the plug passes above the face M it will spring rearward again into the notch L of the lever J.

It will be seen that the lever J and the indicator rod resting upon it will not have been moved by this operation, but when the key-lever is released and its rear end begins to

descend the end of the plug N will engage the lower wall of the notch L in the forward end of the lever J, and carry the forward end of the lever down with it and thereby lift the indicator rod resting upon the rear end of the lever. When the rear end of the plug N and forward end of the lever J in their downward movement reach the point where the arcs of the respective circles described by them intersect each other the plug will become disengaged from and release the lever and the latter will be re-set by the spring O, one of which is connected at one end to each of the levers J in front of the shaft K and at its other end to a rod P extending across the entire machine.

Supported at its ends by pendent arms Q fast upon a rock-shaft R is the indicator-supporting bar S which co-operates with the shoulders G upon the forward sides of the indicator-rods B. Projecting forwardly from the rock-shaft R, one near each end, are two arms T, T, resting on the rod P, and whose front ends are connected by a rod U extending across the entire machine above the rear ends of the key-levers H. It results from this construction that whenever the rod U is lifted the shaft R will be rocked and the supporting bar S thrown forward from under the shoulder G of any indicator-rod that may be resting upon it, thereby releasing such rod and permitting its indicator to drop out of sight.

When the front end of any key-lever is depressed to its limit of stroke its rear end will strike the rod U and throw forward the bar S to release any indicators which may be supported upon it. When the key-lever is released and its rear end begins to descend the rod U will drop back again and the bar S resume its normal position, and when the shoulder G of the rod which is being lifted by the rear end of the lever J corresponding to the operated key-lever reaches the bar S it will push it slightly forward, pass it, and catch upon it when the lever J is released and re-set.

From the foregoing description it will be seen that when the front end of any key lever is depressed to its full extent its rear end will lift the rod U and move the supporting bar S to release any indicator rod or rods which may be upheld by it; and that when the key-lever is released and re-set the indicator rod corresponding to it will be lifted by the lever J and caught upon and held up by the supporting bar S.

It will of course be understood that the mechanism of the machine is to be inclosed in a suitable casing having a window at which the indicators are exposed to view when lifted by the operation of their appropriate key-levers, as is usual in this class of machines.

My invention, in its broader scope, is not limited to the particular method and means I have shown and described for lifting the rods and indicators upon the return strokes

of the keys, but contemplates broadly such new mode of operation, when accomplished by any means coming within the terms of my respective claims. Again, where levers such as the levers J are employed between the key levers and indicator rods, any suitable form of connecting devices between their front ends and the rear ends of the key levers may be employed in place of the spring-plugs which I have shown. For instance, in Fig. 3 I have illustrated a gravity trip V which may be substituted for the spring-plug. These trips are pivoted upon the sides of the keys, in line with the levers J, and their rear ends or noses project to the rear of the ends of the keys into position to co-operate with the front ends of the levers J. When the front end of a key-lever is depressed and its rear end lifted the nose of its trip V will ride up over the face M of the corresponding lever J, being depressed as it passes, and when it gets above said face the gravity of the forward end of the trip will re-set it and throw the nose of the trip upward and rearward over the end of the lever. When the key-lever is released and its rear end descends the rear end of its trip will engage the end of the lever J, and as the trip cannot yield in this direction it will carry the front end of the lever J down with it and lift its rear end and the indicator-rod resting thereon. When the rear end of the trip and the forward end of the lever J reach the point at which the arcs of the circles described by them intersect each other they will become disconnected and the spring O will re-set the lever, as before explained. Furthermore, the particular method I have described for moving the supporting bar S upon the positive strokes of the key levers, to release the elevated indicators, is not essential to my invention in its broader scope, and other methods may be substituted for it.

Having thus fully described my invention, I claim—

1. In an indicating machine, the combination of a series of key-levers representing different values, a series of corresponding indicators lifted into view upon the negative strokes of said levers, and a supporting bar common to all of the indicators for temporarily holding them in exposed position, said bar being moved by the positive strokes of the key-levers to permit the exposed indicators to drop out of view.

2. In an indicating machine, the combination of a series of keys representing different values, a series of corresponding indicators arranged to be brought into view upon the negative strokes of said keys, a movable bar common to all of the indicators for temporarily holding the indicators in exposed position, and a second movable bar or rod common to all of the keys and actuated by the positive strokes thereof to so move the first mentioned bar as to release the exposed indicators and permit them to drop out of view.

3. In an indicating machine, the combina-

tion of a series of key-levers, a series of corresponding indicators carried by vertically guided rods which are lifted upon the negative strokes of the key-levers, a supporting bar for temporarily holding the rods and indicators in elevated position, and a rod or bar common to all of the key-levers and actuated by them to move the supporting bar to release the elevated indicator rods.

4. In an indicating machine, the combination of a series of operating keys or levers, a series of corresponding indicators, carried upon vertically sliding rods and a series of lifting levers interposed between the keys and rods to lift the latter upon the negative strokes of the keys.

5. In an indicating machine, the combination of a series of operating keys or levers, a series of corresponding indicators, a series of lifting levers interposed between the keys and indicators to lift the latter upon the negative strokes of the keys, and a movable supporting bar common to all of the indicators for temporarily holding the lifted ones in exposed position.

6. In an indicating machine, the combination of a series of operating keys or levers, a series of corresponding indicators, a series of lifting levers interposed between the keys and indicators to lift the latter upon the negative strokes of the keys, and a supporting bar common to all of the indicators for temporarily holding the lifted ones in exposed position, said bar being moved upon the positive strokes of the keys to permit the exposed indicators to drop out of view.

7. In an indicating machine, the combination of a series of key-levers, a series of corresponding indicators, a series of supporting-rods for the indicators, each provided with a projection or shoulder, a series of lifting levers interposed between the indicator-rods and key-levers for lifting said rods upon the

negative strokes of the key-levers, and a supporting bar co-operating with the shoulders upon the indicator-rods to temporarily hold the indicators in exposed position.

8. In an indicating machine, the combination of a series of key-levers, a series of vertically-guided indicator-rods carrying indicators, and each provided with a supporting shoulder, a series of lifting levers interposed between the indicator-rods and key-levers for lifting said rods upon the negative strokes of the key-levers, a supporting bar co-operating with the shoulders upon the indicator-rods to temporarily hold the indicators exposed to view, and a rod common to all the key-levers and actuated by the positive strokes thereof to move the supporting bar to release the exposed indicators.

9. The combination of the key-levers H, provided with the spring-plugs N, the vertically sliding indicator-rods B carrying indicators A, and the lifting-levers J interposed between the rods B and levers H.

10. The combination of the key-levers H provided with the spring-plugs N, the indicator-rods B carrying indicators A and provided with shoulders G, the supporting-bar S co-operating with the shoulders G, and the lifting levers J interposed between the rods B and levers H.

11. The combination of the key-levers H provided with the spring-plugs N, the indicator-rods B carrying indicators A and provided with shoulders G, the rock-shaft R, the supporting bar S carried thereby, the arms T fast on said shaft, the rod U connecting the arms T and adapted to co-operate with the key-levers, and the lifting levers J interposed between the rods B and key-levers H.

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