

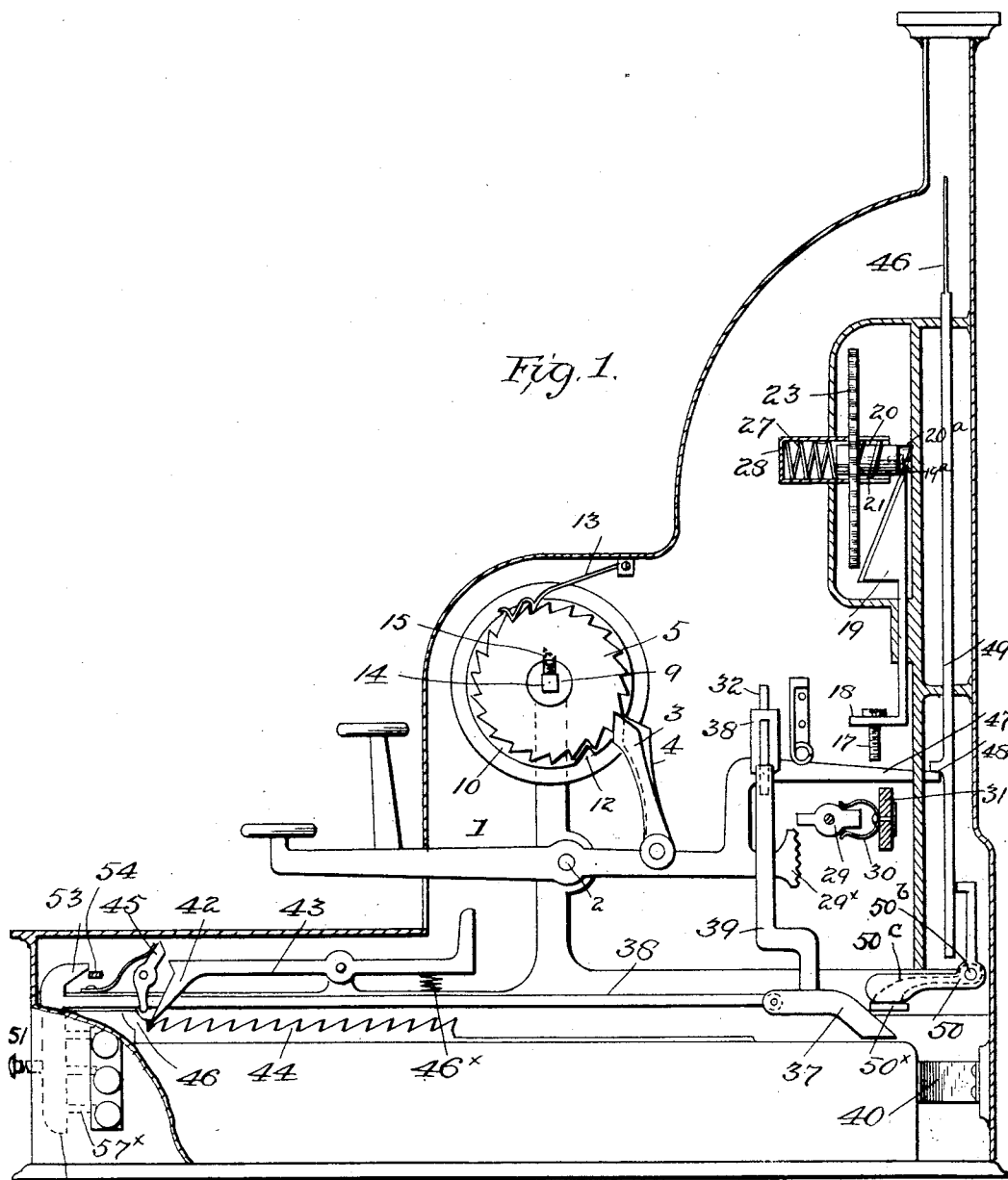
(No Model.)

3 Sheets—Sheet 1.

W. H. THOMPSON.
CASH REGISTER.

No. 511,663.

Patented Dec. 26, 1893.



52 Attest

Wm. F. Hall
J. M. Copenhaver

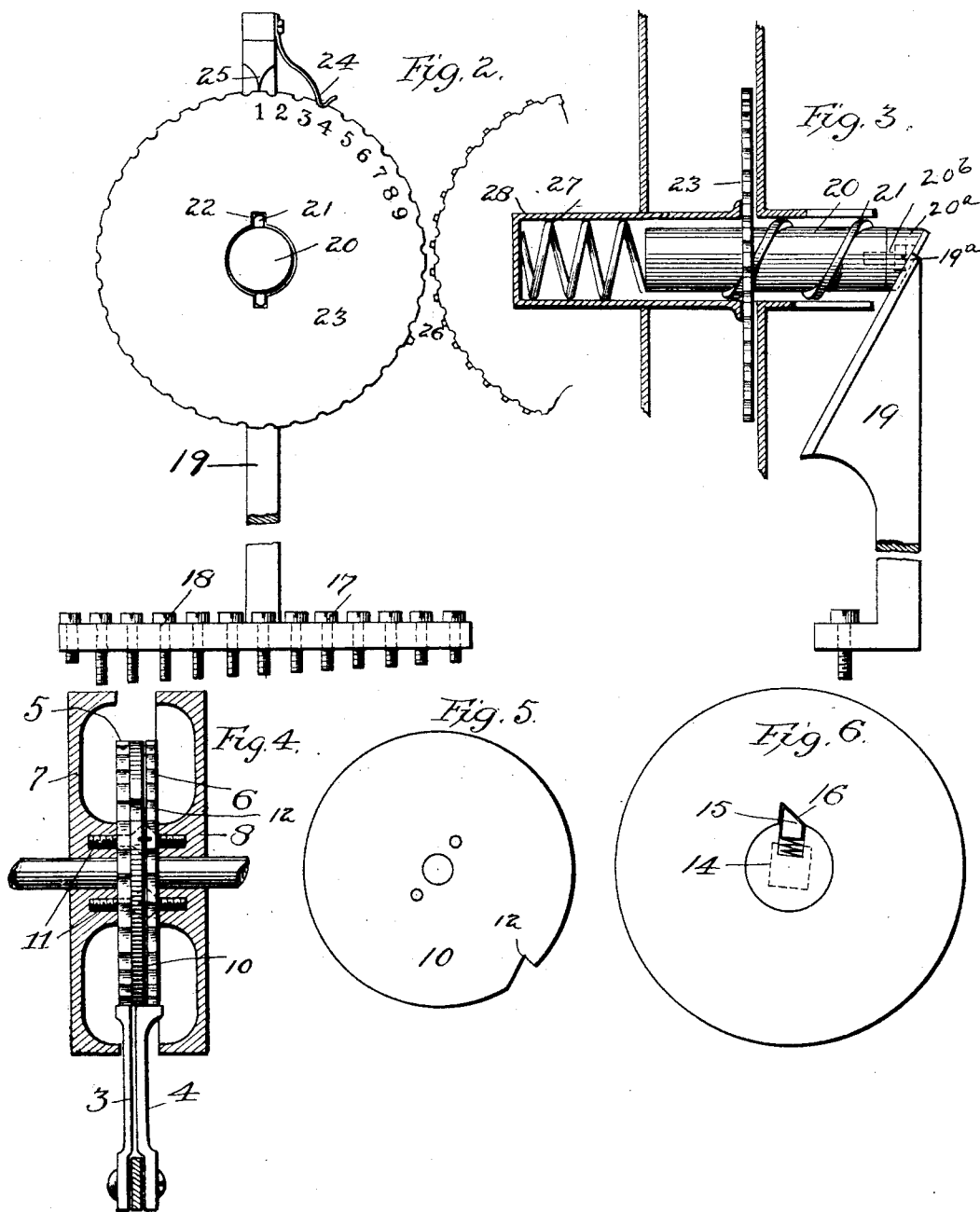
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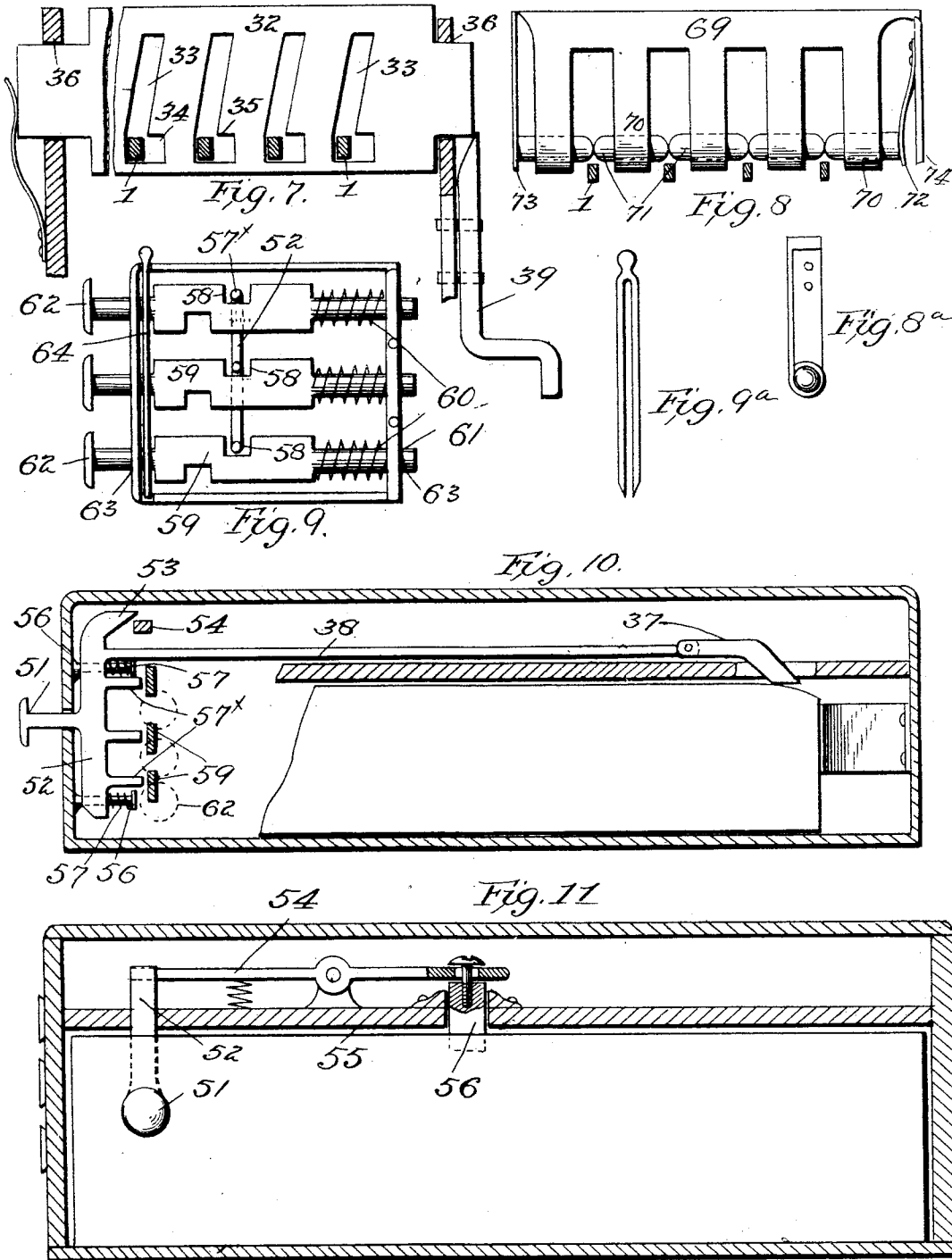
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UNITED STATES PATENT OFFICE.

WILLIAM HENRY THOMPSON, OF EAST STROUDSBURG, PENNSYLVANIA.

CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 511,663, dated December 26, 1893.

Application filed May 4, 1893. Serial No. 472,940. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HENRY THOMPSON, a citizen of the United States of America, residing at East Stroudsburg, in the county of Monroe and State of Pennsylvania, have invented certain new and useful Improvements in Cash-Registers, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention includes indicating and registering mechanism operated by keys and a drawer combined with a key lock designed to lock the keys when the drawer is in and to unlock them only by operating the drawer outwardly the drawer being controlled by a combination lock and push button whereby the entire machine including the keys, the tablets and drawer will be locked when the drawer is in its closed position. The invention includes such an arrangement of parts whereby the operation of the push button to open the drawer will effect the release of the tablet last displayed and permit it to fall, and improvements in the detail and total adding mechanism and in details of construction hereinafter pointed out.

In the drawings:—Figure 1, is a vertical sectional view from front to rear with most of the parts in side elevation. Figs. 2, and 3 are detail views of the total adding mechanism. Figs. 4, 5 and 6 are details of the detail adder mechanism. Fig. 7, is a detail view of the key lock. Fig. 8, is a detail view of the means for preventing the operation of more than one key at once. Fig. 8^a is a detail end view of Fig. 8. Figs. 9, 10 and 11, are views of the push rod and the combination lock for controlling the same. Fig. 9^a is a view of the fork for the combination lock.

The key levers 1, pivoted at 2, have each two pawls 3 and 4, pivoted thereto to engage the ratchet disks 5 and 6, respectively of the detail adding disks 7 and 8, on the shaft 9. The disks are loose on the shaft and the left hand disk 5, Fig. 4, is turned step by step by its pawl and ratchet each time the key belonging to the pair of disks is operated while the pawl 4 of the right hand disk rides without effect over the smooth edge of the plate 10, between the ratchets and carried by the ratchet of the left hand ratchet to which it is secured by screws 11. When the notch 12, in

the plate 10, comes around the pawl 4 falls therein to engage the ratchet 6 and operate the same one step. The next operation of the key carries the smooth part of the plate under the pawl 4 which now rides thereon without effect until the left hand disk makes another complete revolution, when the right hand disk is advanced one more step. Suitable detents 13 prevent retrograde movement of the disks. The disks may be set by placing a wrench upon the squared end 14 of the shaft 9, a spring beveled catch 15, engaging the notches 16, Fig. 6 of the disks when the shaft is turned. The rear ends of the key levers have right angular portions extending under pins 17 of the bar 18, said pins being set at different heights in relation to the key lever's so that more or less of the key lever's motion will be lost in inverse proportion to its value, the cent key thus imparting less movement to the bar 18 than the dollar key. The bar 18 has a wedge extension 19 which when the keys lift the bar thrusts longitudinally the shaft 20 having the spirals 21 engaging notches 22 in the total adder disk 23 which is carried on said shaft and by which spiral the disk is turned, a spring detent 24 being arranged to hold the disk in its moved position while a pointer 25 in connection with the numbers on the disk register the amount. A second disk may be arranged to be operated once for each revolution of the first as at 26, Fig. 2. The spiral shaft is returned to normal position by the spring 27, in the casing 28, the said shaft on its return rotating as at this time the disk is held by its detent. The rib 19^a on the wedge 19 has a groove to receive a rib on the cap piece 20^a secured to the end of the shaft 20 by the screw 20^b countersunk in the cap piece. This cap piece and screw form a swivel connection between the shaft and the wedge which allows the shaft to turn when returning to normal position. When the wedge is forced up the frictional contact between the cap piece and the end of the shaft is sufficient to hold the shaft against turning.

The arrester consists of the pivoted pawl 29, to engage the toothed projections 29^x of the key and under tension of a U shaped spring 30 secured to the bar 31 and engaging the tail piece of the arrester. The key lock consists of a plate 32 Figs. 1 and 7 having a

series of inclined slots 33 with lateral lower extensions 34 forming shoulders 35. The key levers pass through the lower parts of these slots and when any key lever is lifted it strikes the inclined edge of the slots and shifts the plate laterally in its bearings 36, Fig. 7, to bring the shoulders 35 over the unoperated levers to prevent their operation after one key has been moved.

10 In order to control the key lock from the drawer I provide a pivoted foot 37 on the rear end of the push rod 38 which foot is held up in normal position by its free end bearing on the upper edge of the drawer said foot holding up a wedge bar 39 which bears on the end of the locking plate and forces the same to the left, Fig. 7, to lock all the keys. When the drawer is released and is forced out by its spring 40 the pivoted foot drops and the wedge bar falls thus allowing the spring 41 to force the lock bar to the right, thus unlocking all the key bars.

42 Fig. 1 is a pawl on the drawer arrester lever 43, which pawl engages a series of teeth 44 on the drawer which prevents the drawer when once opened being pushed back until one of the keys is operated which causes the depression of the rear end of the drawer arresting lever and the withdrawal of the pawl from the teeth. When lifted the pawl end of the lever 43 is held up by a pivoted spring catch 45 until the drawer is entirely closed so that the shoulder 46 thereon will release the spring catch. The lever is pressed by a spring 46^x. By this arrangement it will be noticed that the drawer when in, locks the keys and the drawer when out is locked out until a key is operated and an indication and registration is made. The indicating tablets 46 are displayed each time a lever is operated so that the rear end 47 thereof will engage the lug 48 on the tablet rod 49 and lift said rod which is then held up by the right angular weighted dog 50, Fig. 1, the upper end of which falls under the end of the tablet rod.

The drawer when closed is released by pushing in the push rod 38 which has a button 51 Figs. 1, 10 and 11 at the front of the case extending from the vertically arranged plate 52, which also has a wedge shaped extension 53 to operate a catch lever 54 pivoted to the partition 55, Fig. 11, and having the catch 56 at its end extending down through the partition to engage the drawer. When the lever is operated the drawer spring forces it out. The plate 52 is guided by pins 56, having springs 57 forcing the plate and push rod constantly toward the front. When the rod is pushed in it not only releases the drawer but also the rear inclined end of the pivoted foot 37, lifts the bar 50^x up and tilts the pivoted dog 50 to release the tablet rod and allow the tablet which has been displayed to fall. The bar 50^x is carried by arms 50^c at each side of the machine only one of which is shown in Fig.

1 in dotted lines which arms are pivoted on the rod 50^b on which also the dogs are pivoted. The push plate 52 has pins 57^x adapted to enter the notches 58 in the combination lock bars 59 Fig. 9 when said notches are in line with the pins. The lock bars are pressed normally forward by the springs 60 on their stems bearing against shoulders on the bars and the frame plate 61. Said bars have push buttons 62 by which any or all of them may be pressed in so that the notches will align with the pins on the push plate and then the push rod is free to be pushed in. Normally however one or more of the notches in the bars is out of line with its pin and a certain manipulation of one or more of the bars is necessary in order that the lock may be operated. In order that the combination may be changed the bars are made flat in their notched parts while their stems are rounded so that the bar may be turned in its bearings 63 to bring either edge uppermost, the notch in one edge being in a different position from that in the other edge relative to the pin on the push plate. In either position the plates are held upright by a removable fork 64, which is thrust down over the bar and may be removed to permit them to be reversed. In order to prevent more than one key being operated at once a bar 69 is provided Figs. 1 and 8 having notches to receive the keys and bearings 70 for laterally movable pins 71 which bear on each other and have limited lateral movement sufficient to allow one key to be operated. They are pressed to one side by a spring 72, Fig. 8, and their movement is limited by the stops 73, 74.

I claim—

1. In combination, the keys, the total adder mechanism comprising the disks, the spiral shaft passing through the same and the connections from the keys for operating said shaft lengthwise, substantially as described.

2. In combination, the keys, the cross bar having the series of pins the total adder disk, the spiral shaft passing through the same, the wedge bar connected to the cross bar for operating the spiral shaft and the spring for returning the shaft to normal position, substantially as described.

3. In combination, the keys, the registering mechanism operated thereby, the drawer, the locking bar movable horizontally and laterally of the keys to lock them in position and the holder for said locking bar consisting of the vertically movable wedge bar arranged to be held up by the drawer when the same is in, substantially as described.

4. In combination, the keys, the registering mechanism operated thereby, the drawer, the key locking bar movable horizontally and laterally of the keys to lock them in place the vertically movable holder bar engaging the laterally sliding lock bar and the pivoted foot between the holder and the drawer, said holder being arranged to be elevated to lock

the keys in normal position when the drawer is closed, substantially as described.

5. In combination, the registering mechanism, the key lock comprising the plate having the inclined slots with shouldered portions, the keys in said slots adapted to operate the slide and the means for operating the slide independently of the keys consisting of the vertically movable holder bar, the pivoted foot for controlling the same, and the drawer to move said pivoted foot upward to shift said plate and lock the keys, substantially as described.

6. In combination, the keys, the registering mechanism, the drawer having the series of teeth, the arrester lever adapted to be operated by the keys and the springcatch adapted to hold the arrester lever up and arranged to be released by the closing of the drawer, substantially as described.

7. In combination, the keys, the registering mechanism, the key lock with means for holding it in locked position when the drawer is closed, and the arrester for retaining said drawer in open position, said arrester being arranged to be operated by the keys to release the drawer, substantially as described.

8. In combination, the keys, the indicating tablets, with their rods, the retaining dog, the drawer and drawer lock and the push rod having at its rear end an incline adapted to engage and operate the retaining dog directly, said rod having also an incline at its front end to operate the drawer lock directly, substantially as described.

9. In combination, the keys, the indicating rods, the dog therefor, the key lock, the drawer and the push rod independent of the

key lock adapted to release the tablet dog, said push rod having a pivoted foot to control the key lock, substantially as described.

10. In combination, the keys, the indicating rods, the retaining dog therefor, the key lock, the drawer and drawer lock and the push rod independent of the key lock adapted to release the drawer and having a pivoted foot to control the key lock with an incline to operate the tablet dog, substantially as described.

11. In combination, the keys, the indicating tablets, the drawer with its lock, the push rod to release the tablets and a series of combination lock bars to control the operation of the push rod, substantially as described.

12. In combination, the keys, the indicating tablets, the drawer with its lock, the pusher rod to control the tablet and the series of combination lock bars having upper and lower notched edges, said bars being reversible and the means for holding them in either position, substantially as described.

13. In combination, the keys, the indicating mechanism, the push rod for releasing the same, the drawer with its lock, the push rod having the plate at its end with the upper incline adapted to operate the drawer lock and provided also with pins and the notched combination lock bars adapted when properly adjusted to receive the pins in the notches, substantially as described.

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

WILLIAM HENRY THOMPSON.

Witnesses:

N. S. LODER,

D. W. DAVIS.