

No. 858,537.

PATENTED JULY 2, 1907.

S. H. POCKOCK.
CASH REGISTER.

APPLICATION FILED APR. 3, 1905.

3 SHEETS—SHEET 1.

Fig. 3.

0
1
2
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6
7
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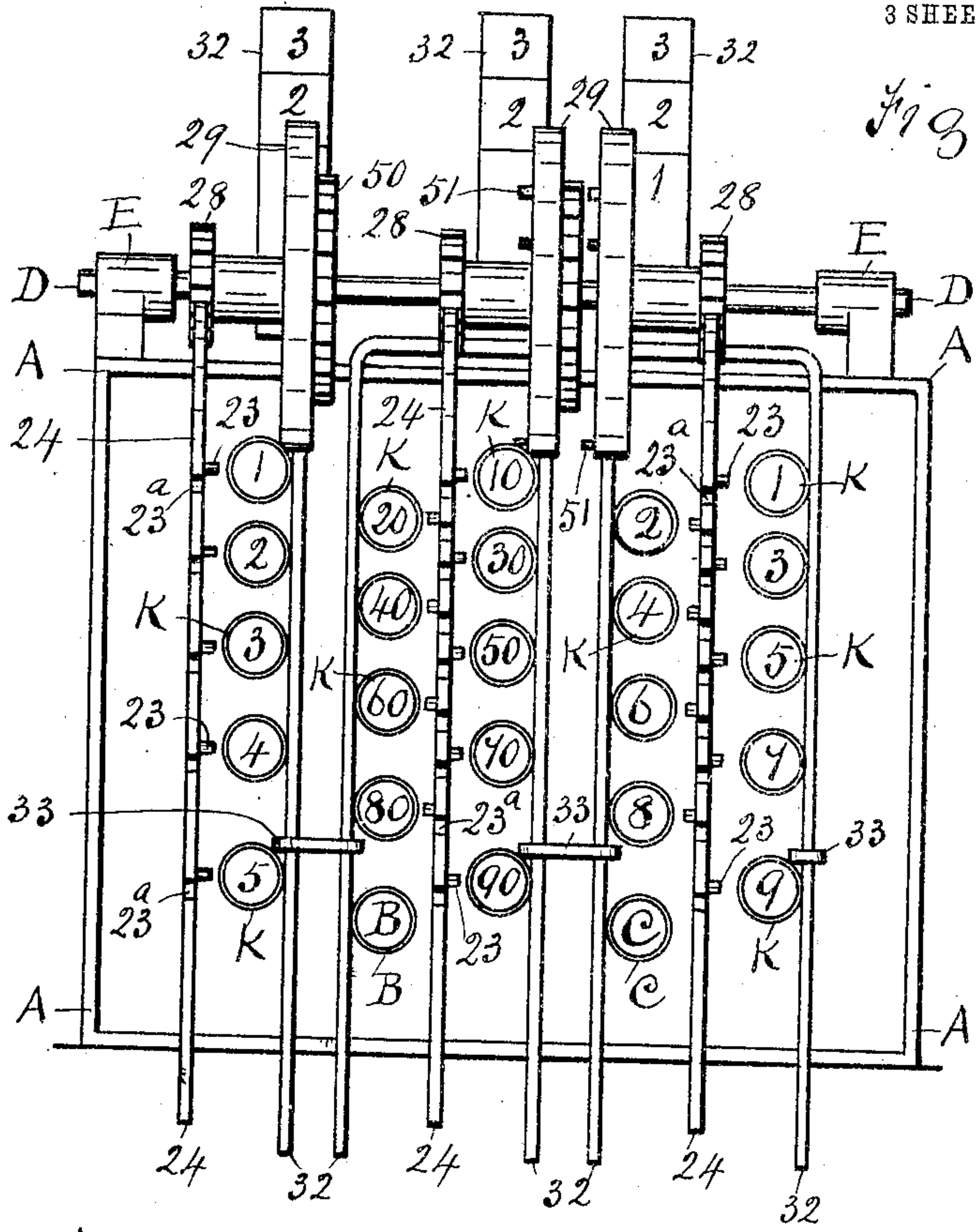
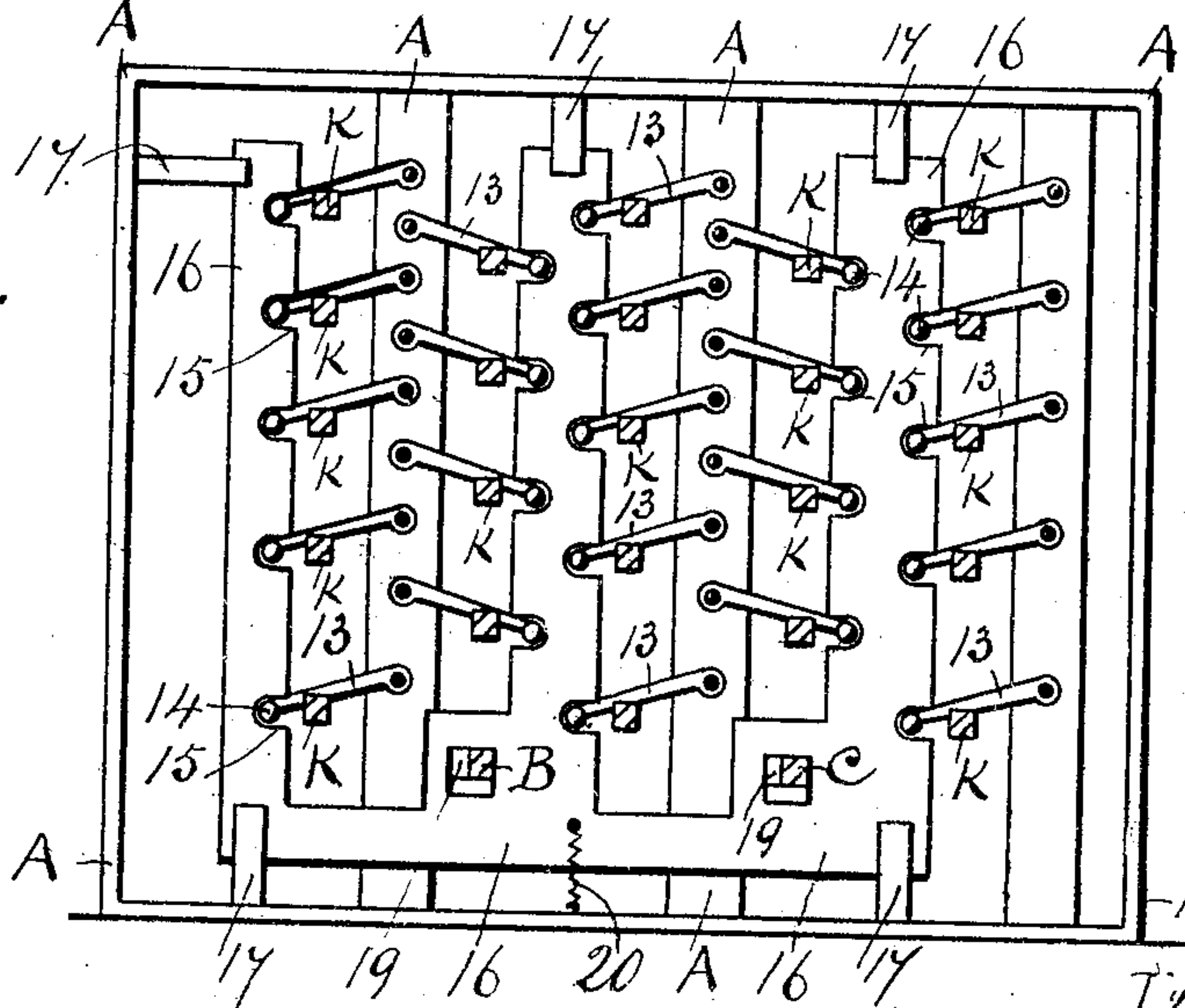


Fig. 1.

Fig. 2.



Witnesses.
Thos Postigan
Omar Leonard.

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Stephen H. Pockock
By John H. Hendry, Atty.

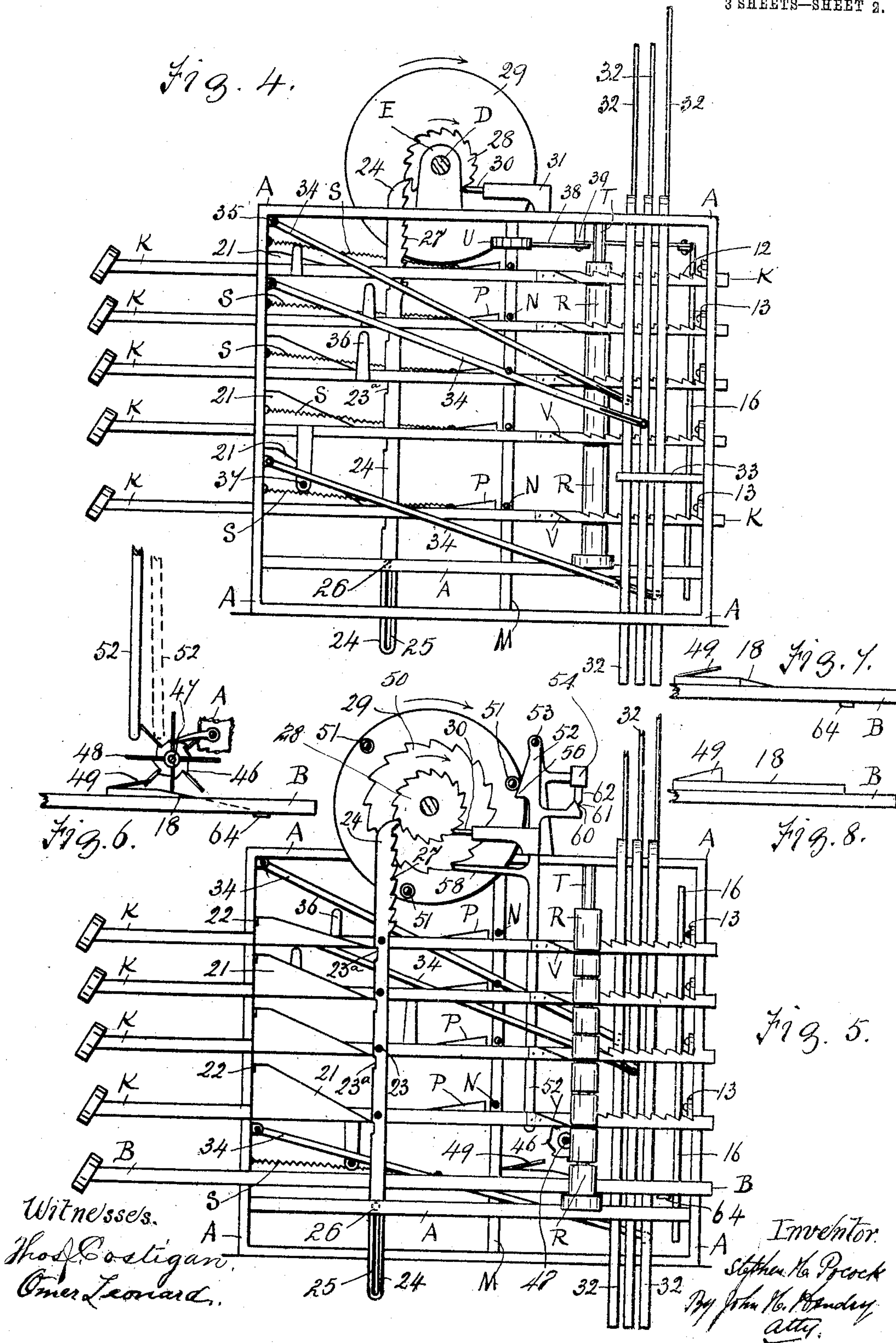
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3 SHEETS—SHEET 3.

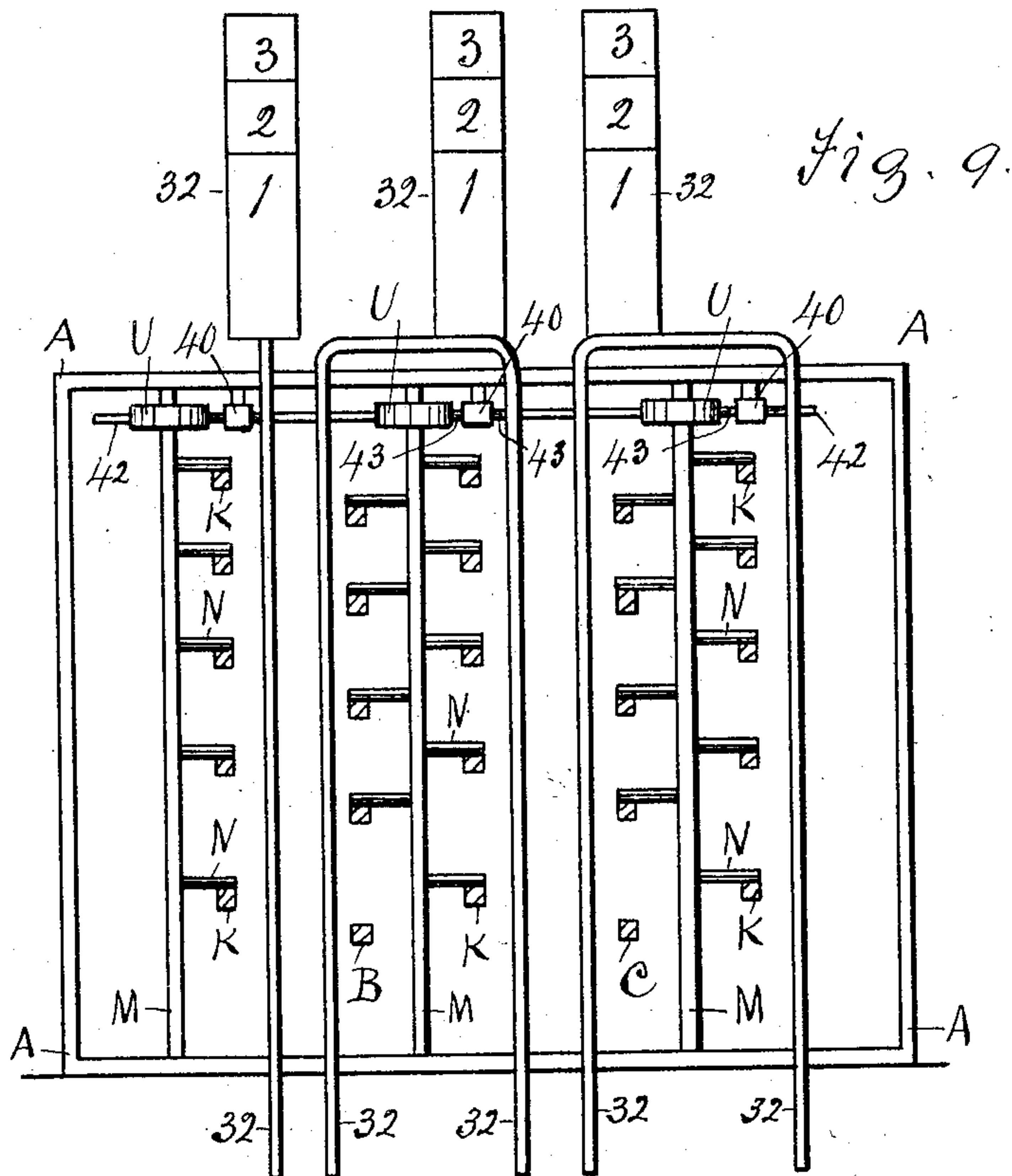


Fig. 10.

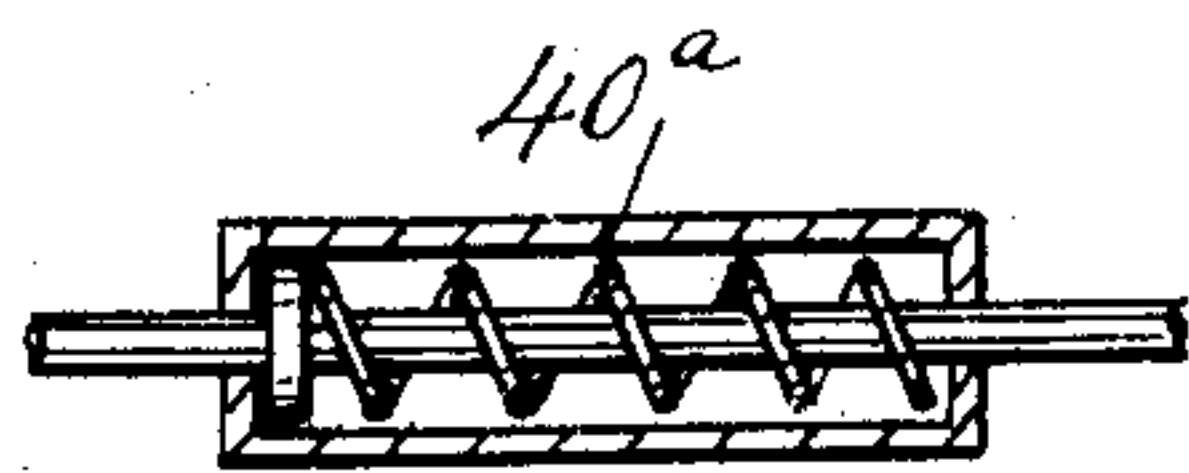
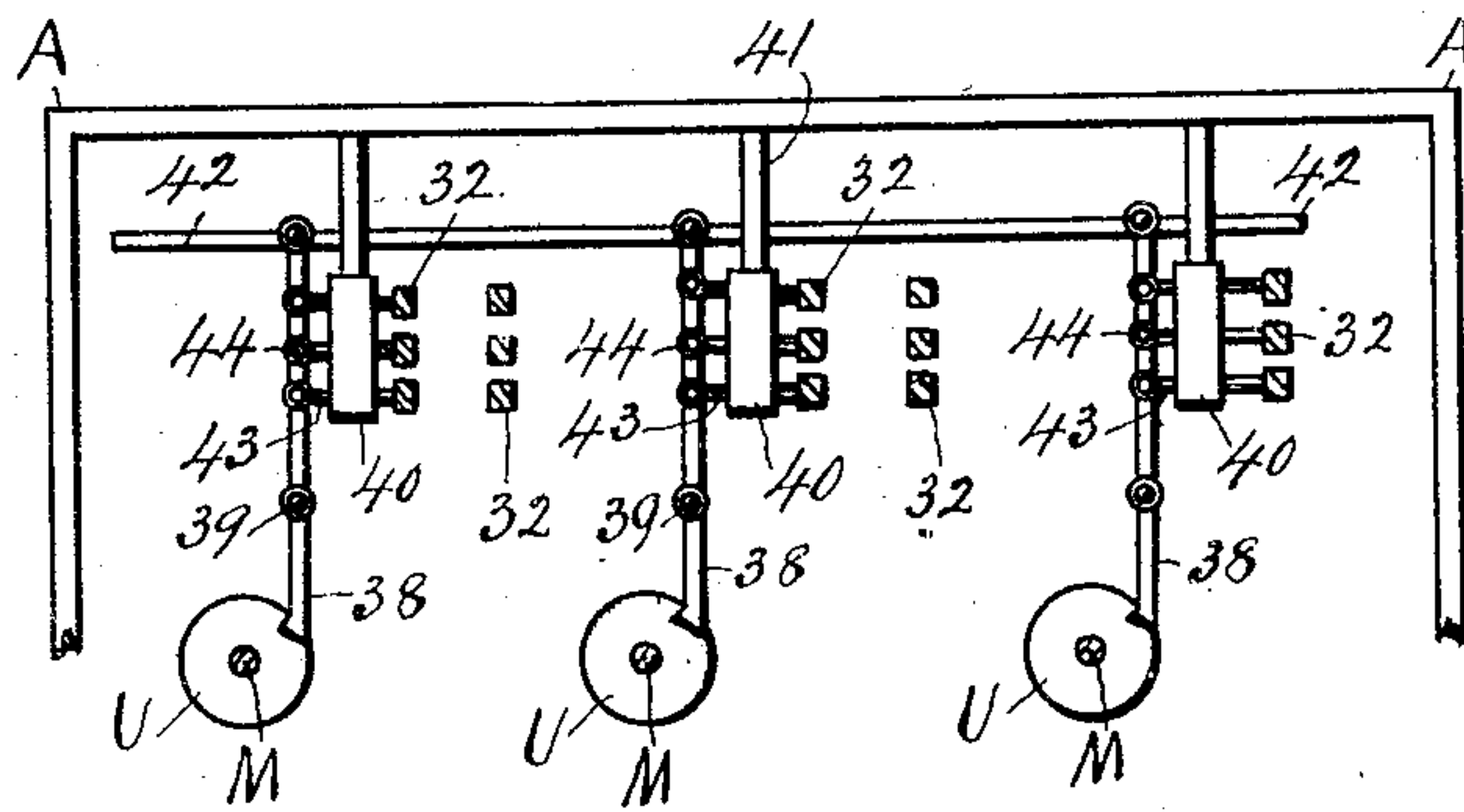


Fig. 11.

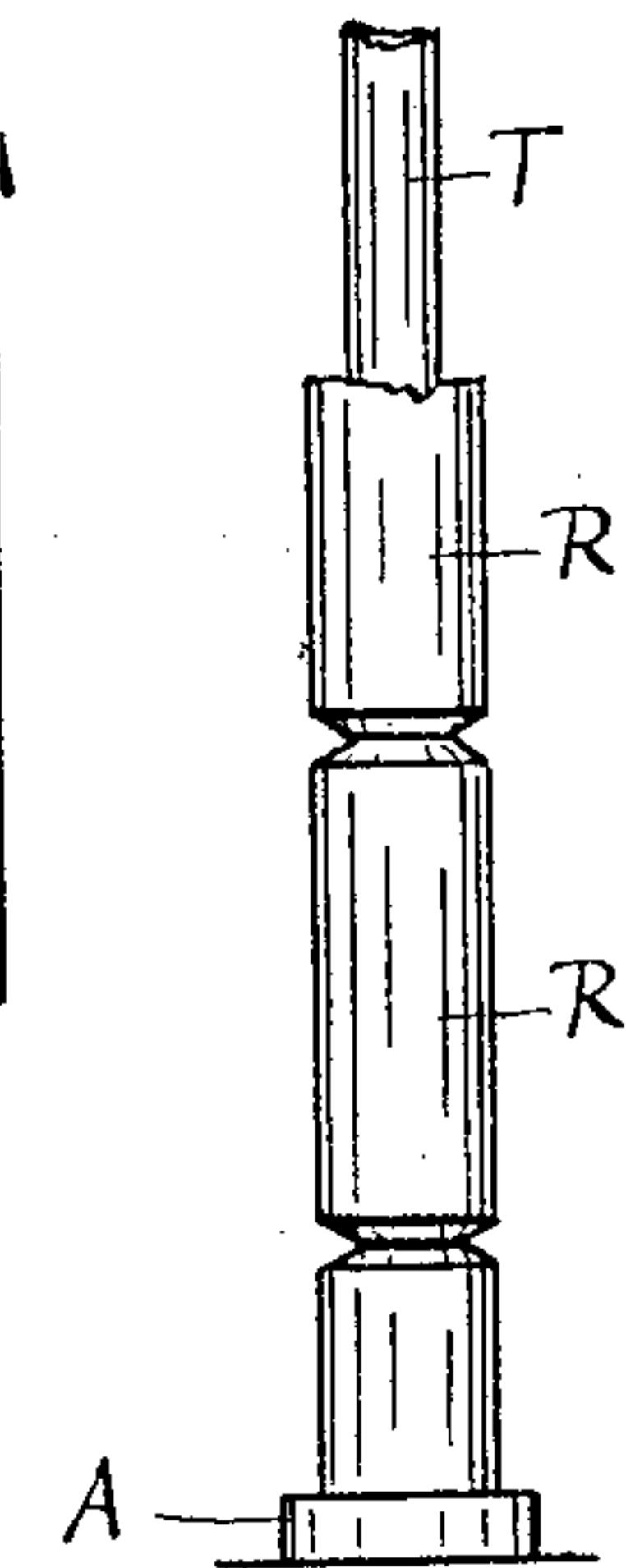


Fig. 12.

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UNITED STATES PATENT OFFICE.

STEPHEN H. POCOCK, OF ST. CATHARINES, ONTARIO, CANADA.

CASH-REGISTER.

No. 858,537.

Specification of Letters Patent.

Patented July 2, 1907.

Application filed April 3, 1905. Serial No. 253,616.

To all whom it may concern:

Be it known that I, STEPHEN HARRY POCOCK, a citizen of Canada, and a resident of St. Catharines, in the county of Lincoln and Province of Ontario, Canada, have invented new and useful Improvements in Cash-Registers, of which the following is a specification.

My invention relates to improvements in cash registers in which horizontal push keys are arranged to rotate certain numeral disks by means of vertical graduated lifting racks, and said keys adapted to lift vertical indicators by means of graduated connecting rods pivotally connected to the frame and to the indicators.

The invention also contemplates providing means for retaining the keys when pushed to the rear until released by independent initial keys; also certain rollers one above the other for engagement of the keys to prevent the operation of more than one key in one bank of keys at a time.

Figure 1, is a front elevation of the machine the front part of the framework being removed. Fig. 2, is a front elevation of the rear part of the machine, the keys thereof being shown in section. Fig. 3, is an enlarged front elevation, or face of one of the numeral disks. Fig. 4, is a side elevation of the machine as viewed from the right-hand side thereof, or unit side of the machine showing the mechanism of the first bank of keys, the other bank of keys being similar. Fig. 5, is a sectional elevation of the machine looking from the right showing the mechanism between the tens of units banks of keys and the lower initial key marked B, in Fig. 1 of the drawing, the lower initial key marked C, in Fig. 1 of the drawing being similar. Fig. 6, is a detail side elevation of the lower part of the transferring device as partially shown in Fig. 5 of the drawing. Fig. 7, is a side elevation of the rear end part of the lower initial keys, one of which is shown as the lower key in Fig. 5 of the drawing. Fig. 8, is a plan of Fig. 7 of the drawing. Fig. 9, is a front elevation of the machine, the front part removed. Fig. 10, is a plan of the rear part of the machine showing the indicator rods in section. Fig. 11, is an enlarged sectional detail of a common spring plunger of the machine all of which are of similar construction. Fig. 12, is an enlarged detail elevation of a few of the rollers.

Similar letters refer to similar parts throughout the several views.

In the drawing the stationary frame of the machine is indicated by A, the upper horizontal stationary shaft by D, and the shaft bearings by E. All the horizontal push-keys, are, for convenience, indicated by K, except the two lower initial keys B and C. The initial keys B and C are for use by different clerks. The rear end part of the keys K have upper ratchet teeth 12

and extend through the rear side of the frame A. The levers 13 are pivotally connected to the rear of the frame and fit into the ratchet teeth 12 and allow any one of the keys to be pushed, and to prevent any one of the keys K from being withdrawn. The levers 13 have frontwardly projecting pins 14 which fit into the recesses 15 of the false back 16 shown in Fig. 2, of the drawing.

17 are guides for the false back and allow the same to be slightly raised by means of the incline brackets 18 on the side of the rear part of the initial keys B. and C.

The inclined bracket 18, passes through the opening 19, in the false back 16 and consequently raises the same, when a key B or C is pushed.

20 is a spiral tension pull spring connected to the false back 16 and to the frame A. The front part of the keys K are provided with inclined brackets 21 on the side of said keys, the front end of the brackets 21 abut the inner side of the frame A. The top of the brackets have lips 22 which fit in recesses 23, in the sides of the graduated lifting rack 24 when said rack is raised by means of the bracket 21 engaging the roller 23 extending from the sides of the lifting rack 24. The lower end of the rack 24 has a vertical slot 25 which guides the rack by means of the guide pin 26 of the frame A. The upper end of the rack 24 has ratchet teeth 27 which are adapted to rotate the ratchet wheel 28, together with the numeral disk 29 next to said rack 24, and on the shaft D.

30 are spring controlled plungers in casing 31 on the frame A in rear of the wheels 28. The plungers engage the teeth of the wheels 28 and prevent the same from rotating the opposite way to that indicated by arrow above the disk 29. The indicators 32 above the top of the machine, have lower extending rods, or stems, in guides 33, and to which the slotted ends of the connecting rods 34 are connected, the opposite and higher end of the rods 34, being pivotally connected to the frame A, at 35.

The connecting rods 34 are lifted by graduated lifting brackets 36 on the keys K. The lower lifting bracket 36 lifts the lower connecting rod 34 by means of a pin 37 on said bracket. When a key K, is pushed, a rod 34 is lifted, consequently an indicator to which the slotted end of a rod 34 is loosely connected is raised.

S, are spiral pull springs connected to the push keys, and the opposite end of said springs S, are connected to the frame A.

R, are a series of rollers adapted to roll loosely on the vertical stationary shaft T, and more particularly adapted to vertically slide on said shaft. The rollers R, rest one upon the other, and the ends of each roller have slightly beveled, or chamfered edges, to afford an opening between each roller for the entrance of the incline teeth, or wedges V, on the sides of the keys. It will be

noticed that when any one key is pushed that the thin edge of the wedge V, enters the opening formed between the ends of the rollers R, and consequently all the rollers above the wedge are raised sufficiently to allow the body part of the wedge to pass between the end part of the two rollers engaged. The lower of the two rollers merely revolves, but the upper roller of the two revolves and slides upward. There are as many shafts T, having rollers R, as there are banks, or partial banks, of keys K and placed between the odd numeral keys K, and the even numbered numeral keys K of any bank of keys, as shown in Figs. 4 and 5.

The object of the rollers R, is, to prevent any two keys in a bank from being operated at the same time, or, when one key is pushed toward the rear, another key in the same bank of keys can not be operated, on account of the upper entrances for the upper wedges, to the one in use, being closed, and the lower entrances, to the one in use, being locked.

When a key K is operated or pushed to its limit in order to raise an indicator, said key must be released and allowed to resume its normal position by means of an initial key B or C as the case may be, before another key K in the same set or bank can be operated.

The vertical shafts M, extend from the lower to the upper part of the frame A, and are capable of rotary motion, either way. The shafts M, have a series of projecting pins N on diametrically opposite sides thereof, with which the inclined lips P, on the upper side of the keys, engage. When a key is pushed the lip P pushes the pin N, consequently the shaft M rotates until the lip P passes the pin N. The incline of the lip P, as shown, allows the key to return by gradually lifting the pin N, together with the shaft M, until the lip P has passed the pin, then the shaft M resumes its position by gravity. On the upper part of the shaft M, is a cam wheel U secured thereto, said cam being adapted to reciprocate a lever 38, conveniently fulcrumed to a part of the frame at 39 shown in Fig. 10 of the drawing.

It will be noticed that three shafts M, with their cam-wheels U and levers 38 are shown, and which are operated identically in the same manner. 40, are cases rigidly supported at 41 by the frame A. The rear end of the levers 38 are connected by a horizontal rod 42, and spring plungers 43 pass through the casings 40 and one end of said plungers pivotally connect to the levers 38 at 44, and the opposite end of said plungers engage the indicator vertical rods 32. The springs in the casings 40 press the plungers 43 to contact with said vertical rods 32. Ordinary spiral springs 40^a in the casings 40 push the plungers 43 outward in a manner which is common.

When any one of the cams U are rotated by means of a key, as described, the cam presses its end of the lever 38 toward the right hand side of the machine consequently the opposite end of the levers 38 together with the plungers 43 are brought toward the left-hand of the machine consequently releasing the indicators 32 from the influence and control of the plungers 43. Each bank of indicators are controlled by the spring pressure plungers 43. It will be noticed that the unit indicators, and the tens of unit indicators have each two vertical rods.

In convenient proximity to the rear end part of the initial keys B and C is a ratchet wheel 46 adapted to rotate on its shaft 47 together with blades 48. A spring

blade 49 is on said end part of said keys and adapted to engage said blades in succession and rotate the wheel 46 one fourth revolution at a time.

The tens of units and the hundred of units numeral disks 29 are provided with ratchet wheels 50, and the unit and tens of unit disks 29 have three pins 51 on the left hand side thereof. Vertical rods 52 (one each between numeral disks 32) are pivoted at 53 to a standard 54 of the frame A. Each rod 52 is provided with a gradual inclined lip 56, and an arm 58, which engages the ratchet wheel 50 of said disks, and rotates the same. When the disks 29 rotate, as indicated by arrow, together with the rollers 51, and the ratchet wheel 50, a roller 51 engages the lip 56 of the pivotal rod 52 and causes the lower part of said rod to approach in proximity to an upper blade 48 of the ratchet wheel 46. When an initial key is pushed the spring blade 49 engages the lower blade 48 of the ratchet wheel 50 and the upper blade 48 pushes the rod frontward to normal position, as shown in full lines in Fig. 6, of the drawing. As the initial key returns, the spring blade 49 is adapted to fall to a lower position by contact with a blade 48. As shown in Fig. 6, other blades 48, operable by another spring pawl 49, are located on shaft 47 back of the other levers 52 for operation thereof by the other initial key or keys. The upper part of each rod 52 has a rearwardly extending arm 60 with beveled lip 61, and the standard 54 has a spring plunger 62 with beveled lower end to engage either side of the beveled lip 61 to retain the lip 61, in operative position to the pins 51 of a disk 29.

64 is a block on the underside of the rear part of the initial keys B and C (see Figs. 6 and 7) to hold the respective initial keys in normal position while a numeral key K, is in process of being pushed. These blocks 64 prevent release of the initial keys B and C by frame 16 except when the numeral keys are pushed all the way in, so that a partial operation of a numeral key will not release the initial keys.

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

1. In a cash register, the combination with registering mechanism, of a plurality of rows of numeral keys of different orders for operating the registering mechanism, a single means for locking the numeral keys of all the rows in set position, and an independent releasing key for releasing said locking means thereby simultaneously releasing all the keys of the different rows engaged therewith.

2. In a cash register, the combination with registering mechanism, of numeral keys for operating the registering mechanism, means for locking the numeral keys in set position, and a plurality of independent initial releasing keys, for use by different clerks, each adapted for releasing said locking means.

3. In a cash register, the combination with registering mechanism, of numeral keys for operating the registering mechanism, said numeral keys having a row of teeth, movable locking members automatically engageable with the teeth of the keys and permitting setting of said keys but preventing return thereof except when released, a coupler for the locking members aforesaid, whereby they may be simultaneously released from engagement with the numeral keys, and an independent releasing device for operating said coupler.

4. In a cash register, the combination with registering mechanism, of numeral keys for operating the registering mechanism, said numeral keys having a row of teeth, pivoted locking members, one for each numeral key, automatically engageable with the teeth of the keys and permitting setting of said keys but preventing return thereof except when released, a coupler frame having a loose en-

gement with the pivoted locking members to permit their independent movement, and an independent releasing device for operating said coupler.

5. In a cash register, the combination with registering mechanism, of a plurality of horizontally movable parallel numeral keys for operating the registering mechanism, means for locking the numeral keys in set position, and an independent horizontally movable releasing key for releasing said locking means.

6. In a cash register, the combination with registering mechanism, of a plurality of sets or rows of keys for operating the registering mechanism, shiftable blocking devices for the several sets or rows of keys consisting of a plurality of independent slidable bevel-ended rollers placed end to end, rods on which said rollers slide and rotate, and members on the keys adapted to pass between beveled ends of the rollers positioned adjacent thereto to permit the movement of any key by the separation of said rollers, said slidable rollers being positioned to block all remaining keys of a set when a given key thereof is operated.

7. In a cash register, the combination with a rotary register wheel and a rotary toothed wheel for turning said register wheel, of a shiftable bar having teeth engaged with the toothed wheel aforesaid, a key for shifting said bar, and means for locking the bar from the key when the parts are in predetermined positions.

8. In a cash register, the combination with a rotary register wheel and a rotary toothed wheel for turning said register wheel, of a shiftable bar having teeth engaged with the toothed wheel aforesaid, a key for shifting said bar, and members on the bar and key adapted to engage each other and lock the bar when the parts are in predetermined positions.

9. In a cash register, the combination with a rotary register wheel and a rotary toothed wheel for turning said register wheel, of a shiftable bar having teeth engaged with the toothed wheel aforesaid, a key for shifting said bar, means for shifting the bar from the key comprising a member on the bar and a cam incline on the key engageable therewith, and members on the bar and key adapted to engage and lock the bar when the parts are in predetermined positions.

10. In a cash register, the combination with a rotary register wheel and a rotary toothed wheel for turning said register wheel, of a shiftable bar having teeth engaged with the toothed wheel aforesaid, a plurality of keys of different values each having a cam incline, the cam inclines of the different keys being of different pitch, members on the shiftable bar engageable by the respective cam inclines, whereby the bar is shifted different distances by the different keys proportional to the value of said keys, and members on the bar and on the respective keys engageable with each other on the complete operation of a key to lock the bar.

11. In a cash register, the combination with registering mechanism, of a shiftable bar for operating said registering mechanism, a plurality of keys of different values, and means on the bar and on the respective keys adapted to interlock and prevent movement of the bar beyond the distances predetermined by the value of the respective keys.

12. In a cash register, the combination with keys arranged in sets representing the "units," "tens," "hundreds," etc. numeral positions, of movable indicators for the respective sets of keys, means for setting the indicators from their controlling keys, indicator holding means for the different indicators, means for coupling all of the indicator holding means of the different sets together, and means for releasing the indicators previously set when a new number is registered on a set of keys previously used.

13. In a cash register, the combination with a plurality of movable indicators, of a set of keys, means for setting the indicators from the keys, means for holding the indicators in set position comprising independent locks for the respective indicators, a rock shaft for operating said locks, and members on the rock shaft adapted for engagement upon the keys, whereby a given lock is set by the depression of a key and released by the depression of another key thereafter.

14. In a cash register, the combination with a plurality of movable indicators, of a set of keys, means for setting the indicators from the keys, means for holding the indicators in set position comprising independent locks for the respective indicators, a pivoted lever operating the locks, a rock shaft having a cam for shifting the pivoted lever, members on the rock-shaft for engagement by the respective keys, and cams on the keys for engaging said members on the rock-shaft.

15. In a cash register, the combination with registering mechanism, of transfer mechanism for said registering mechanism, keys for operating the registering mechanism, means for holding the keys locked in set position after being pushed in, and a releasing key for releasing the key-holding means aforesaid and for operating the transfer mechanism.

16. In a cash register, the combination with registering mechanism, of transfer mechanism for said registering mechanism provided with an oscillatory operating lever, a movable device for operating said lever to effect the operation of the transfer mechanism, keys for operating the registering mechanism, means for holding the keys locked in set position after being pushed in, and a releasing key for releasing the key holding means and provided with means for operating the movable device aforesaid, whereby the transfer mechanism is operated by said key.

17. In a cash register, the combination with registering mechanism, of transfer mechanism for said registering mechanism provided with an oscillatory operating lever, a bladed wheel adapted to rotate step by step co-operating with said lever, keys for operating the registering mechanism, means for holding the keys in set position, and a releasing key for releasing the key-holding means and provided with a spring-actuated member co-operating with the bladed wheel on one movement of the releasing key and depressed by said wheel on the other movement of said releasing key.

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Witnesses:

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