

J. L. MORRIS & W. D. JAMIESON.

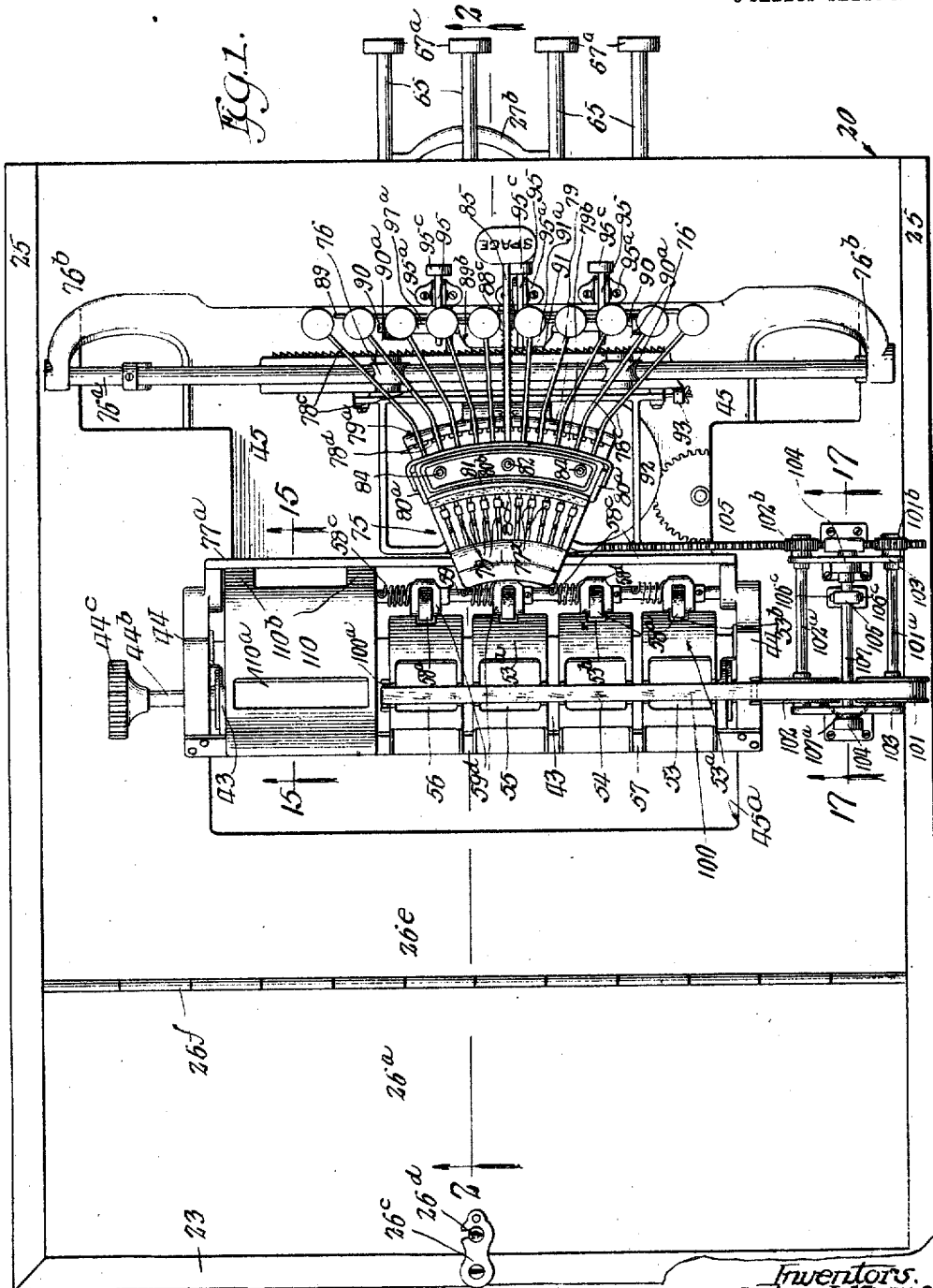
CASH REGISTER.

APPLICATION FILED APR. 25, 1910.

1,005,280.

Patented Oct. 10, 1911.

8 SHEETS—SHEET 1.

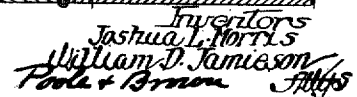


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APPLICATION FILED APR. 25, 1910.

8 SHEETS--SHEET 2.



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8 SHEETS—SHEET 3.

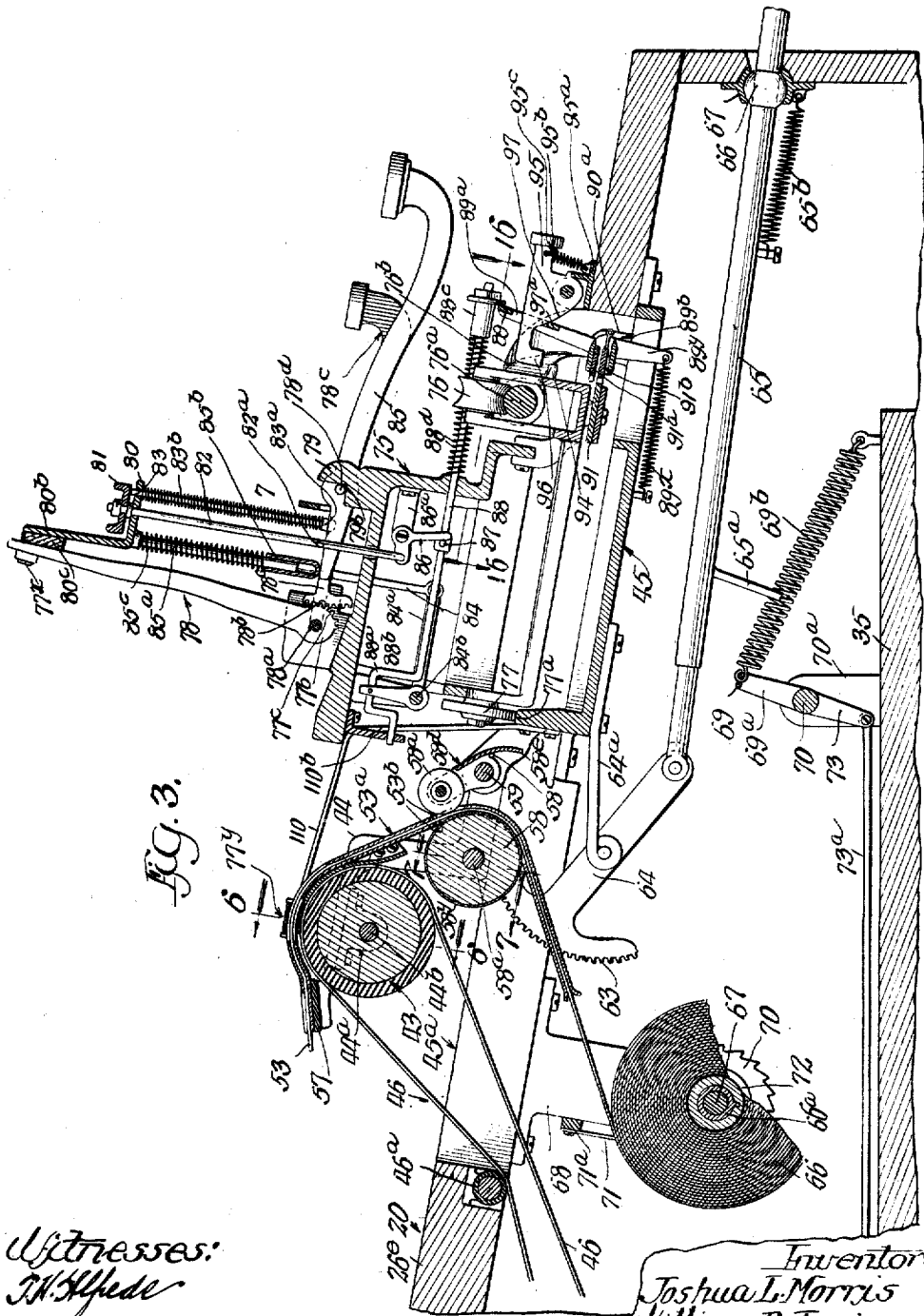


FIG. 3.

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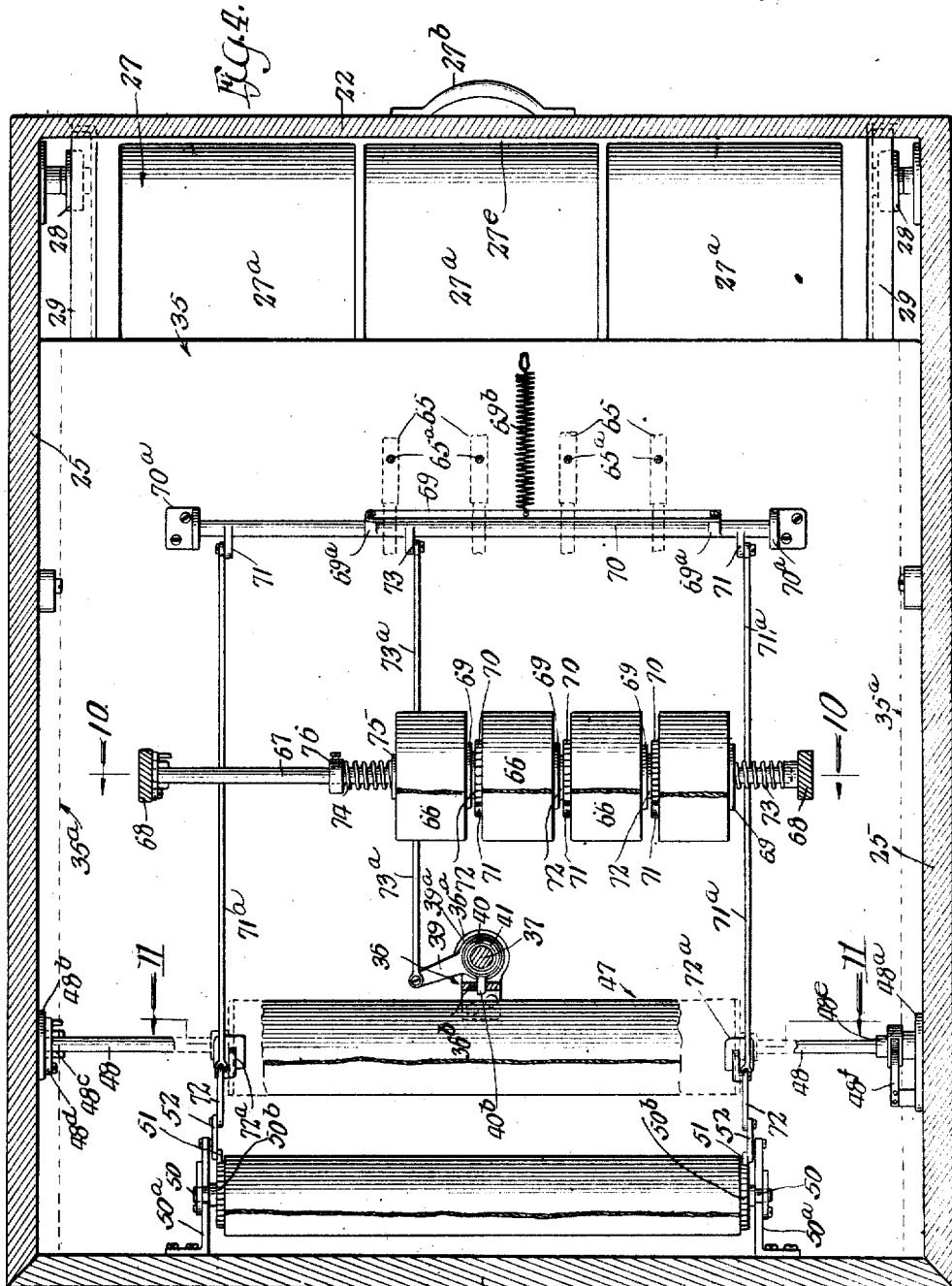
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8 SHEETS—SHEET 4.



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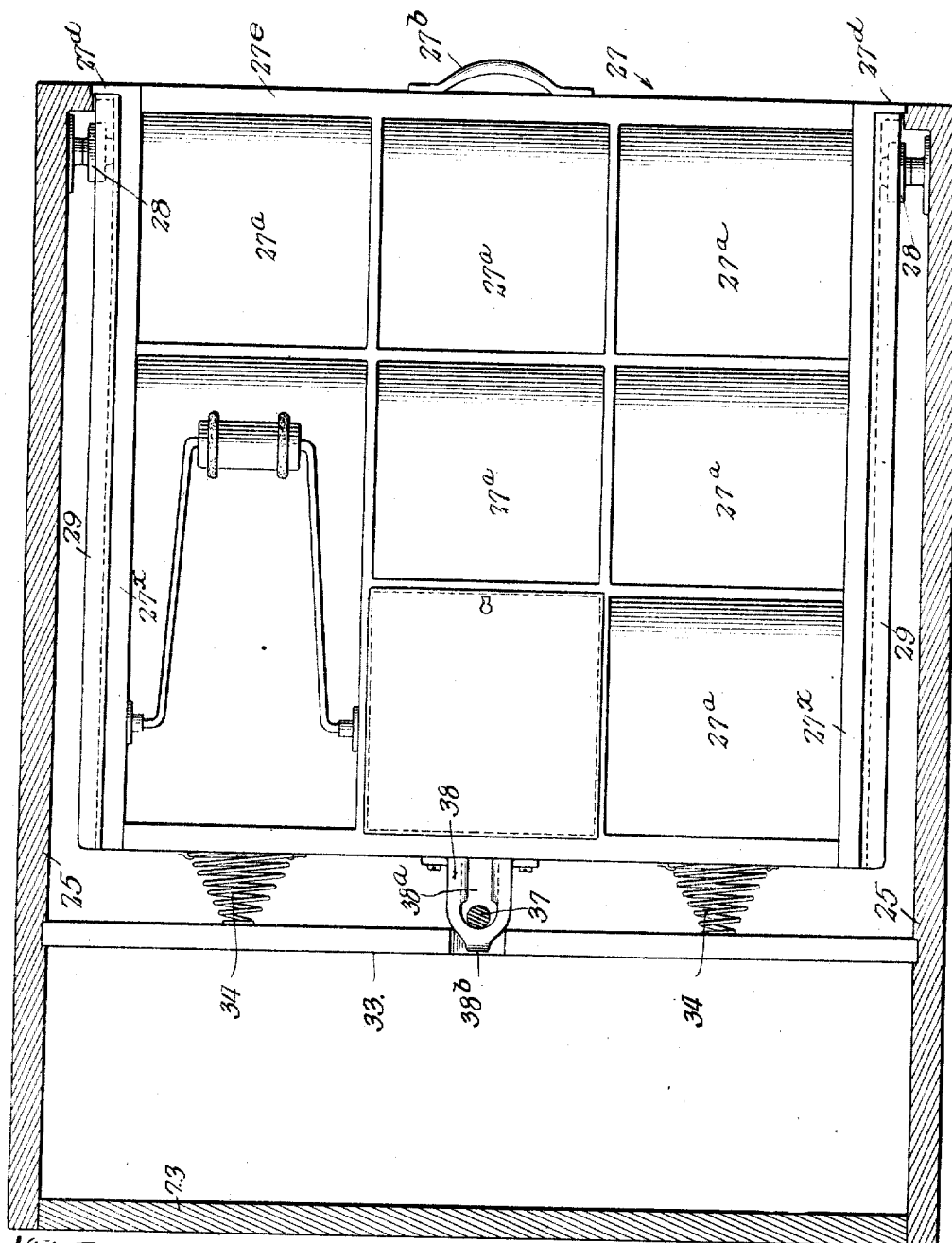
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APPLICATION FILED APR. 25, 1910.

1,005,280:

Patented Oct. 10, 1911.

8 SHEETS—SHEET 5.



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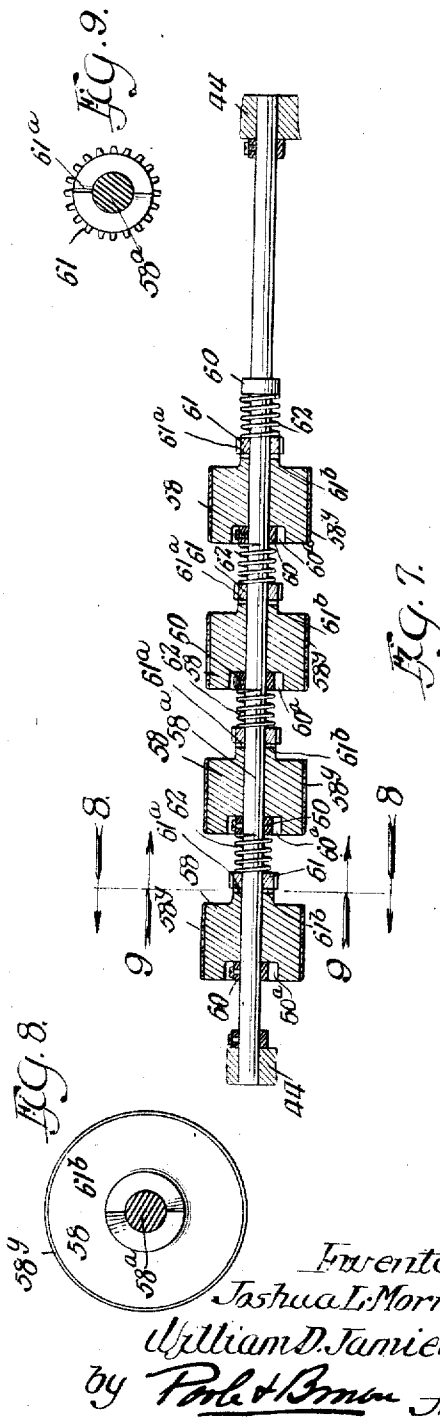
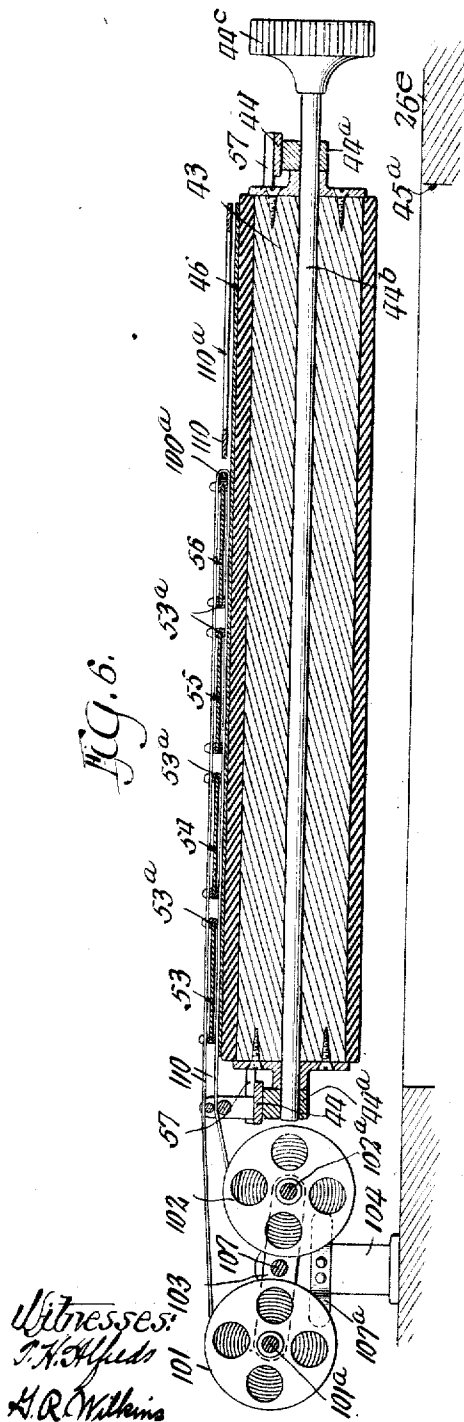
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8 SHEETS-SHEET 6.



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Patented Oct. 10, 1911.

8 SHEETS—SHEET 7.

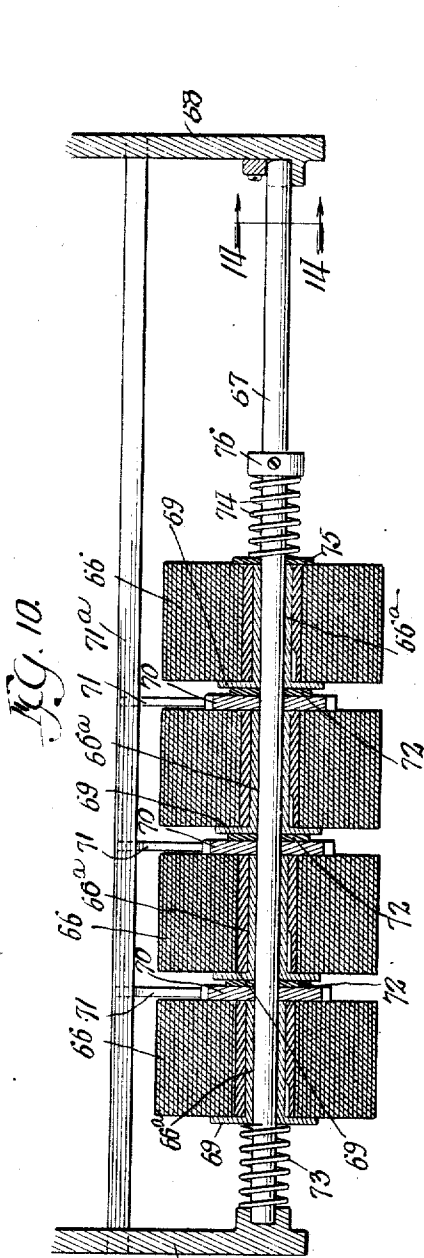


Fig. 10.

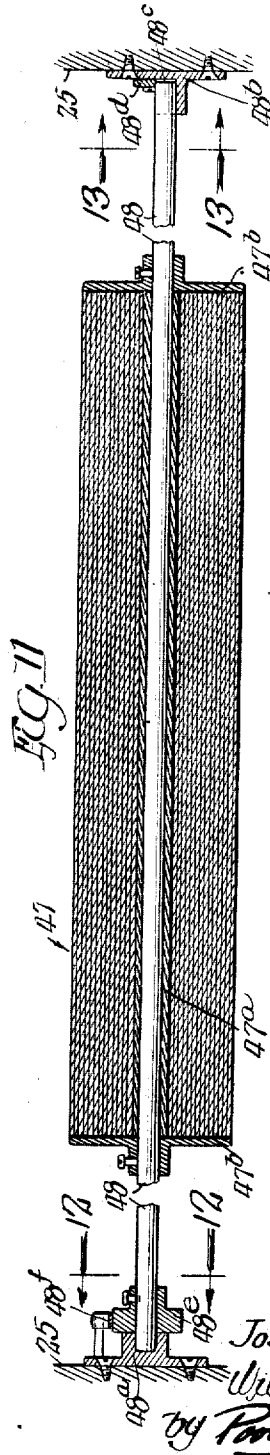


Fig. 11.

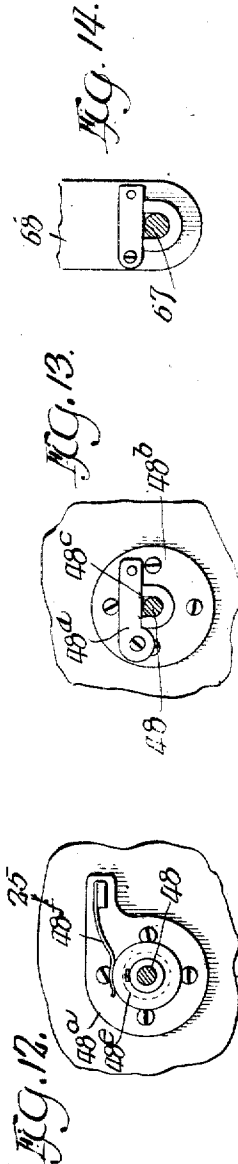


Fig. 12.

Fig. 13.

Fig. 14.

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APPLICATION FILED APR. 25, 1910.

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8 SHEETS—SHEET 8.



Fig. 17.

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UNITED STATES PATENT OFFICE.

JOSHUA LINCOLN MORRIS, OF COUNCIL BLUFFS, AND WILLIAM D. JAMIESON, OF SHENANDOAH, IOWA, ASSIGNORS, BY MESNE ASSIGNMENTS, TO MORRIS CASH REGISTER COMPANY, OF PORTLAND, MAINE, A CORPORATION OF MAINE.

CASH-REGISTER.

1,005,280.

Specification of Letters Patent.

Patented Oct. 10, 1911.

Application filed April 25, 1910. Serial No. 557,360.

To all whom it may concern.

Be it known that we, JOSHUA LINCOLN MORRIS and WILLIAM D. JAMIESON, citizens of the United States, and residents of Council Bluffs, in the county of Pottawattamie, State of Iowa, and Shenandoah, in the county of Page, State of Iowa, respectively, have invented certain new and useful Improvements in Cash-Registers; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to an improvement in cash registers and consists of the matters hereinafter described and more particularly pointed out in the appended claims.

The improved cash register embraces in its preferred form a casing in which is provided a platen; means for feeding from a supply roll to said platen a record strip which is adapted to receive a record of all transactions made in the use of the machine, and means for rewinding said record strip upon a second roll; means for feeding from supply rolls a plurality of receipt or check strips arranged side by side and adapted to be passed over said platen in a position above said record strip; a ribbon superposed above said check strips and passing between said check strips and said record strips; a movable typewriter carriage provided with type keys and type which are adapted to engage said platen to print upon one of said check strips the amount of a cash sale or other transaction; letter-spacing mechanism adapted to feed said typewriter carriage; tabulator mechanism including stops adapted to bring said typewriter carriage to rest in position to write upon any one of the plurality of check strips; a spring controlled cash drawer; and mechanism adapted to deliver any check written upon into position to be torn from its continuous strip, the operation of which mechanism at the same time feeds and winds the record strip and releases the spring-controlled cash drawer so that it may open in the usual manner under the action of its springs.

As shown in the drawings: Figure 1 is a top plan view of my improved machine.

Fig. 2 is a longitudinal section through the machine on the line 2-2 of Fig. 1. Fig. 3 is a partial section similar to that of Fig. 2, shown on an enlarged scale. Fig. 4 is a transverse section through Fig. 2 on the line 4-4 thereof. Fig. 5 is a similar section through Fig. 2 on the line 5-5 below the plane of the last above named section. Fig. 6 is a longitudinal section through the platen on the line 6-6 of Fig. 3 showing the ribbon devices. Fig. 7 is a longitudinal section through the feed wheels which feed the sale check strips, said sections being taken on the line 7-7 of Fig. 3. Figs. 8 and 9 are cross-sections through Fig. 7 on the lines 8-8 and 9-9, respectively, said figures representing the same section but looked at from opposite directions. Fig. 10 is a longitudinal section through the check strip spools on the line 10-10 of Fig. 4. Fig. 11 is a longitudinal section through the record sheet supply roll on the line 11-11 of Fig. 4. Fig. 12 is a detail sectional view taken on the line 12-12 of Fig. 11. Fig. 13 is a similar view taken on the line 13-13 of Fig. 11. Fig. 14 is a detail sectional view taken on the line 14-14 of Fig. 10. Fig. 15 is a partial, vertical, sectional view taken on the line 15-15 of Fig. 1. Fig. 16 is a partial, transverse, sectional view of Fig. 3 on the line 16-16 thereof, showing the escape mechanism and tabulator mechanism in plan view. Fig. 17 is a cross-section through the ribbon feed mechanism taken on the line 17-17 of Fig. 1. Fig. 18 is a section through Fig. 17 on the line 18-18 thereof. Fig. 19 is a similar section through Fig. 17 on the line 19-19 thereof.

The working parts of the improved cash register are inclosed in a casing which is divided horizontally by a partition wall into upper and lower compartments. In the lower compartment is located a spring-controlled cash drawer and in the upper compartment is contained the several rolls from which the check strips are fed, a roll from which the record strip is fed and a second roll upon which it is rewound, and the mechanism for feeding the record and check strips, and for operating the cash drawer. Upon the top of said casing is supported the platen and the typewriter carriage. 20 indicates said frame as a whole. It has a bottom wall

21; front and rear walls 22, 23, respectively; side walls 25, 25, and is inclosed by a top 26. Said frame may be made of any convenient material but in the example illustrated herein it is shown as made of wood. The top wall 5 26 comprises a back horizontal member 26^a and a front inclined member 26^c. Said horizontal member is supported with its top face flush with the upper edges of the side 10 and rear walls by means of longitudinal plates 26^b, 26^b secured to the side walls. A swinging latch 26^c, pivotally connected to the upper edge of the rear wall 23, engages a pin or screw 26^a on the part 26^a of the top 15 wall to lock the same in place. The inclined section 26^c of the top wall is connected to the horizontal section 26^a by means of a hinge 26^c and rests at its front margin on the upper edge of the front wall 22.

20 27 indicates the cash drawer. This may be of any usual construction and is preferably provided with a number of compartments 27^a. Said cash drawer has a handle 27^b near the middle of its front wall 27^c and 25 at each side of said front wall, projecting vertical flanges 27^d, 27^d which limit its rearward movement into the casing. To the side walls 27^e, 27^e of the cash drawer are secured longitudinal flanges or rails 29, 29 which ride 30 on rollers 28, 28 journaled on the side walls of the casing near its front end. A third roller 30 is mounted at the bottom of the back wall of the drawer near its middle on a bracket 31. Said roller rides on a flat rail 35 32 supported above the bottom wall of the casing. The bracket 31 is provided with a horizontal extension plate 31^a which engages the underside of the rail 32, and thus locks the drawer thereto. It also limits the out- 40 ward movement of the drawer. The drawer compartment is closed at the rear by a transversely extending vertical partition board 33.

34, 34 are spiral springs secured to the rear wall of the drawer and adapted to be 45 compressed between said rear wall and the partition 33 when the cash drawer is in closed position. Said springs force the cash drawer open when it is released.

The cash drawer is locked in closed position by the following mechanism:—A horizontal partition wall 35 is located above the 50 cash drawer. Said partition wall extends from side to side of the casing and is supported upon the vertical transverse partition wall 33 and upon longitudinally extending 55 plates 35^a, 35^a secured to the side walls 25, 25 of the casing. Upon said partition wall 35, above and slightly beyond the rear end of the cash drawer is mounted a bracket 60 36 having vertically separated arms 36^a, 36^a in which is mounted a vertical rod 37 which depends through an opening 37^a formed in the horizontal partition wall 35. A rearwardly extended plate 38 is secured to the 65 rear end of the drawer at or near its middle

and is provided with a longitudinally extending slot 38^a in which the lower end of the rod 37 engages. The lower end of the rod 37 is beveled upwardly and forwardly, 70 as indicated at 37^b, and the plate 38 beyond the slot 38^a is curved downwardly and rearwardly as indicated at 38^b for a purpose that will presently appear. Upon said rod 37 is hinged a horizontally swinging rock- 75 arm 39 (see Fig. 4) which is provided with a hub member 39^a having inclined clutch-teeth 39^b. A clutch member 40 is keyed to the rod 37 above the arm 39 with inclined clutch teeth 40^a in engagement with the 80 clutch teeth 39^b. Said clutch member 40 has a projecting pin 40^b which engages in a vertical slot 36^b in the bracket 36, thereby permitting vertical movement of said clutch member but preventing its rotation. A 85 coiled spring 41, bearing between the upper end of said clutch member 40 and the upper arm 36^a of the bracket 36, normally holds the rod 37 in its lowest position with the 90 clutch member 40 engaged with the clutch teeth of the rock-arm 39 and with the lower end of said rod engaged within the slot 38^a of the plate 38 secured to the rear end of the drawer,—thereby holding said drawer 95 locked in closed position.

When the rock-arm 39 is swung forwardly 95 to rotate its hub 39^a, it is apparent that the clutch member 40 will be raised and with it the rod 37 which will release the drawer and permit it to open under the action of the 100 springs 34, 34. Upon the return of the arm 39 to its first position, which occurs immediately, the spring 41 causes the rod 37 to descend with its lower beveled end 37^b in the path of the plate 38. As the drawer is 1 closed the downwardly curved rear end 38^b of said plate engages the beveled end 37^b of the rod and raises it against the action of the spring 41 until the slot 38^a has come beneath said rod, whereupon the rod will descend and engage within the slot, thereby 1 again locking the drawer in closed position. The mechanism by means of which the arm 39 is swung forwardly to release the cash drawer will be described later.

43 indicates a platen rotatably mounted 43 transversely of the inclined top 26^c near its rear margin in a pair of upright bracket arms 44, 44 which are preferably formed 45 integral with a plate 45 secured in any convenient manner in an opening 45^a formed in said inclined top, which plate supports the movable typewriter carriage. The platen 43 50 has a shaft 44^b which is supported in journals 44^a, 44^a bolted to the undersides of the bracket arms 44, 44. The platen shaft 44^b is provided at one end with the usual knurled head 44^c for rotating it by hand.

46 indicates the record sheet. Said record sheet is preferably equal in width to the 55 platen and is fed from a supply roll 47

mounted on a removable shaft 48 arranged transversely of the casing near its rear end above the horizontal partition wall 35. Said shaft is rotatably mounted at one end in a socketed plate 48^a secured to one side wall of the casing, and at its opposite end in a plate 48^b provided with an upwardly opening socket 48^c, the open side of which is closed by a hinged bar 48^d. To the end of the shaft 48, near the socketed plate 48^a is keyed a disk 48^e which is engaged by a flat spring 48^f secured to the plate 48^a. Said spring acts as a brake in its engagement with the disk and prevents the shaft from running away when the record strip feeding mechanism is operated. The record supply roll 47 is mounted on a core 47^a in the usual way and is maintained in proper longitudinal position on the shaft 48 by means of disks 47^b, 47^c located at each end of the roll.

The record strip passes from the supply roll about the platen 43 and then back and down toward the rear end of the casing where it is wound upon a rewind shaft 50 which is rotatably mounted in bracket arms 50^a, 50^b secured to the rear wall of the casing. Said rewind shaft is rotatably and removably mounted in said bracket arms in a manner similar to the way in which the shaft 48 is mounted. Ratchet wheels 50^c, 50^d keyed to the shaft 50 at each end of the roll wound thereon are adapted to be operated by spring controlled pawls 51, 51 carried by bell-crank levers 52, 52 which are pivotally mounted at the forward ends of the bracket arms 50^a, 50^b. The particular mechanism for operating said bell-crank levers will be described later. A transversely arranged guide roll 46^a bears downwardly on the record strip 46 in a transverse line intermediate the platen 43 and the rewind shaft 50. Said guide roll is suitably journaled on the under side of the casing top.

53, 54, 55, 56 represent a plurality of check strips, in this instance four in number, which are located side by side and which are fed over the platen 43 above the record strip 46 from a plurality of supply rolls arranged end for end on a transverse shaft mounted in the casing. All of the check strips are supported and fed in the same way so that a description of the arrangement and operation of one, 53, will suffice for all. The check strip 53 is fed through a flat tube 53^a supported at its rear end on a transverse bar 57 which is secured to the ends of the arms 44. Said flat tube is bent forwardly about the platen 43 and then downwardly about a feed roll 58 which is located in front of and below the platen. Said feed roll is of substantially the width of the check strip 53 and is mounted on a transverse shaft 58^a journaled in the upright arms 44, 44. The flat tube 53^a is provided with a slot or open-

ing 53^b extending through its top and bottom walls above the platen so as to permit the check strip to come in contact with the platen, and with a similar slot or opening 53^c above the feed roll 58 to permit the check strip to contact with said feed roll. A friction roll 58^a engages the check strip through said slot 53^c and holds said check strip in frictional contact with the feed roll 58. Said friction roll 58^a is pivoted in a swinging bracket 58^b pivotally mounted on a transverse shaft 59 located in front of the feed roll 58. A coiled spring 58^c fixed at one end to the shaft and having its other end engaging under a rearward extension 58^d of the bracket, maintains said friction roll in engagement with the roll 58.

The roll 58 is preferably provided with a strip of emery 58^e secured to its outer surface to insure its frictional engagement with the check strip so that it will feed the same. Said roll 58 is loosely mounted on the shaft 58^a and is held at one end in proper spaced relation on said shaft by means of a collar 60 keyed to the shaft and located in a recess 60^a formed in the end of the roll. A gear 61 is mounted loosely on the shaft 58^a adjacent the opposite end of the roller 58 and the engaging faces of the roll and of the gear are provided with clutch teeth 61^a, 61^b which are held in engagement by a spring 62. Said clutch teeth are adapted to actively engage when the gear is rotated in one direction so that the roll 58 will be rotated by the gear but when the gear is rotated in the opposite direction the clutch teeth on the gear will slide past the clutch teeth on the roll without effect. The spring 62 bears between the spur-gear 61 and the collar 60 of the next feed roll 58 for the adjacent check strip 54. The gear 61 is engaged by a segmental gear 63 formed at the rear end of a rock-arm 64 pivoted on a bracket arm 64^a which is bolted or otherwise secured to the underside of the plate 45. It is evident that the movement of the rear end of the rock arm 64 upwardly will rotate the gear 61 which will rotate the feed roll 58 to feed the check strip 53 rearwardly while the return movement of the rock-arm 64 will have no effect on said feed roll.

The check strip is fed from a roll 66 wound on a bobbin or spool 66^a which is loosely mounted on a transversely arranged shaft 67 rotatably suspended in brackets 68, 68 below and to the rear of the feed roll 58. The shaft 67 is removably journaled in said brackets in a manner similar to that of the record supply roll shaft 48. Each check strip spool 66^a is provided at one end with a flange 69. Between the end of the check strip roll 66 and the flange 69 of the adjacent spool 66^a are loosely mounted on the shaft a back ratchet 70 engaged by a spring pawl 71 suspended from a cross-bar 71^a, and

a washer 72. A coiled spring 73 bears between the left hand bracket arm 68 and the flange 69 of the left end spool 66^a. A washer 75 is loosely mounted on the shaft 67 adjacent the right hand end spool 66^a and a coiled spring 74 engages between said washer and a collar 76 which is pinned to the shaft 67. The several spools are thus held against rotation on the shaft by means of the springs, but not so rigidly but that they may be rotated by the pull on the check strip when the feed roll 58 is turned. The back ratchet 70 and pawl 71 takes up the friction of the end of the roll 66 against its face and prevents said friction from being transmitted to the adjacent roll to rotate the same with the particular roll which is being operated.

To the forward end of the rock-arm 64, which carries the segmental gear that operates the feed roll 58, is pivotally connected a longitudinal operating rod 65 which passes loosely through a ball 66 mounted in a socket 67 which is secured to the front wall of the casing above the cash drawer. Said rod 65 projects through said front wall and is provided with a button or key 67^a. A coiled spring 65^b connects the operating rod 65 with the front wall of the casing and holds it normally in its forward position. It will be understood, of course, that there is a rod 65, an arm 64, a gear 61, and a feed roll 58 for each check strip. When one of the operating rods 65 is pushed rearward, it causes the corresponding feed roll 58 to feed its check strip a predetermined amount.

Each of the rods 65 is provided with a depending arm or lug 65^a which is adapted to engage a cross-bar 69 carried by rock-arms 69^a, 69^a which operate a universal bar in the form of a transversely extending rock-shaft 70 rotatably mounted in brackets 70^a, 70^a secured to the transverse partition board 35. The cross-bar 69 is normally held in a forward position by means of a spring 69^b which yieldingly connects said bar to the partition 35. Near the ends of the universal bar are secured rock-arms 71, 71 which are connected by means of links 71^x, 71^x to bell-crank levers 72, 72 pivotally mounted on brackets 72^a, 72^a. Said bell-crank levers are also pivotally connected to the bell-crank levers 52, 52 which carry the spring-controlled pawls 51 that engage the ratchets 50^b. It will be apparent from this description that, when either of the operating rods 65 is pushed rearwardly to rotate the corresponding feed roll 58, the arm 65^a will engage the cross-bar 69 and push it rearwardly, thus rocking the shaft 70 and causing the rock-arm 71 to swing forwardly and, through the links 71^x, 71^x, the connected bell-crank levers 72, 72 and 52, 52 operate the pawls 51 to rotate the ratchets 50^b through a certain angle and wind the record strip on the

rewind shaft 50. Thus, the record strip will be fed a predetermined distance whenever one of the check strips is fed.

A rock-arm 73 carried by the universal bar 70 is connected by a link 73^a to the rock-arm 39 which causes the vertical rod 37 to raise and release the cash drawer; thus it will be seen that when any one of the rods 65 is actuated to feed the record strip and the check strip, the cash drawer will be released and will open under the action of the coiled springs 34, 34.

We now pass to a description of the typewriter carriage, typewriter bars and keys by means of which the check and record strips 80 are printed.

75 indicates a movable typewriter carriage which may be of any usual construction provided with front wheels 76 and rear wheels 77 riding, respectively, on a front rail 76^a and a rear rail 77^a. The plate 45 is provided with an upturned transverse web or flange which forms the rear rail 77^a and the front rail 76^a and consists of a cross-bar or rod supported in laterally disposed brackets 76^b, 76^b formed at the front of said plate.

78 indicates the type-bars, in this case ten in number, which are provided with type 1 to 9, inclusive, and 0, so that numbers of any denomination may be written. Said type-bars 78 are disposed in the arc of a circle and are pivotally mounted on a transversely curved rod 78^a supported on the carriage. Each type-bar is provided with a hub member 77^b having gear teeth 77^c which are engaged by a segmental gear 78 formed at the rear end of a key lever 78^c. There are ten such key levers, one for each type-bar, arranged in radial lines. The forward part of the carriage 75 is provided with a transversely curved rail 79, provided with vertical notches 79^a in which the key levers are located and with a shoulder 79^b on which rest short trunnions 78^d projecting at each side of each key lever. The key levers are thus pivotally mounted on the carriage. It will be apparent that when a key lever 78^c is depressed the corresponding type-bar 78 will be swung upon its pivotal connection with the rod 78^a to bring the type 77^x at the end of said bar into engagement with the platen at 77^z. The return of the key lever to its normal position brings the type-bar back to its normal position.

Above the carriage is located a flat plate 80 formed in the arc of a circle. Said plate is supported by means of upright bracket arms 80^a, 80^a secured to the carriage and is provided on its rear margin with an upright curved flange 80^b. A cushion 80^c is secured to the rear face of said flange to receive the shock of the type-bars when they are returned to their normal position.

81 is a universal escapement operating bar which rests upon the bar 80. It is se-

cured to the upper ends of vertically extending end rods 84, 84 and a middle rod 82. For each key lever there is provided a vertically extending rod 83 which extends at its upper end through an opening in the plate 80 and engages the underside of the universal bar 81, and at its lower end is provided with a bifurcated lug 83^a engaging the upper edge of the key lever to the rear of its pivotal connection with the frame. A coiled spring 83^b bears between said lug and the plate 80, thus normally holding the rear end of the key lever in its lowest position. When the forward end of said key lever is depressed to operate the type bar it raises the rod 83 which, by reason of its engagement with the underside of the universal bar 81, raises said bar. The end rods 84 which are connected at their upper ends to the bar 81 are pivotally connected at their lower ends to rock-arms 84^a, 84^a keyed to a transverse rock-shaft 84^b. The middle rod 82 is provided near its lower end with a right angular offset 82^a which engages the rear end of a spacing key lever 85 arranged midway of the key levers 78^c. Said spacing lever is pivotally mounted on the rail 75 in the same way as the other key levers and projects forward beyond said levers, as plainly to be seen in Figs. 1 and 3. The lower end of the rod 82 is pivotally connected to one arm of a bell-crank lever 86 which is pivotally mounted on a bracket 86^a supported on the front part of the carriage. The other arm of said bell-crank lever 86 engages a lug 87 on a longitudinally extending reciprocable rod 88 which is provided at its rear end with a loop 88^a pivotally connected to a rock-arm 88^b carried by the rock-shaft 84^b. At its forward end said rod 88 projects through an opening in the vertical rail 75 and is there provided with a flanged sleeve 88^c, the flange of which is adapted to engage a transverse bar 89 mounted on vertically swinging rock-arms 89^a, 89^a. Said rock-arms 89^a and said transverse bar 89 form parts of a rocking frame 89^b which is hinged on short pointed bearings 90, 90 mounted in lugs 90^a, 90^a secured to the fixed plate 45. This rock frame operates the escape mechanism. The rod 8 is held in its rearward position by a coiled spring 88^a which bears between the front face of the rail 75 and the rear end of the sleeve 88^c. The escape mechanism may be of any usual or convenient construction and in the simple illustrated comprises a transverse bar 91 secured to the bottom of the carriage and the rigid pawl 91^a and the loose pawl 91^b carried by the rock frame 89^b. Said pawls are retained in their normal position by means of a coiled spring 89^a secured at one end to the underside of the plate 45 and at its other end to a depending bar 89^c forming part of the rock frame 89^b.

When a key lever 78^c or the spacing lever 85 is depressed at its forward end, an upward movement is communicated to the universal bar 81 through the associated rod 83 which is operatively connected to that particular key or, in the case of the spacing lever, through the middle rod 82. The lifting of the bar 81 lifts the rods 82, 84, 84, which rocks the shaft 84^b and swings the bell crank lever 86, thereby moving the rod 88 rearwardly, and with it the flanged sleeve 88^c. This produces a rearward swing of the rock frame 89^b which operates the escape mechanism to permit the movement of the carriage one letter space in the usual manner.

The carriage is fed by means of a spring-controlled barrel 92 which is connected by means of a tape or cord 93 to a lug 93^a formed on the carriage. Said barrel acts to feed the carriage to the right, when the same is released by means of the escape mechanism. The spacing lever 85 is held in its normal position by means of a rod 85^a secured at its upper end to the plate 80 and provided at its lower end with a longitudinally movable cap 85^b which engages the rear end of said spacing lever. A coiled spring 85^c bears between the plate 80 and the upper end of the cap 85^b, thus normally holding said cap in its lowest position.

In order to bring the typewriter carriage opposite the particular check strip that it is desired to write upon, I provide a tabulating mechanism as follows: On the front of the typewriter carriage near its middle above the rack bar 91 of the escapement mechanism, is located a lug or stop 94. 95 indicates hinged stop arms, in this case three in number, one for each of the check strips except the left hand one. Said stop arms are pivotally mounted in brackets 95^a secured to the top of the cash register casing in front of the typewriter carriage, at points spaced apart equal to the distances between the centers of the check strips and each located in line with the predetermined positions of the extreme left hand column to be printed on the corresponding check strip. Said stop arms are provided with rearwardly projecting lugs 96 which are adapted to be swung into the path of the lug or stop 94. Springs 95^b normally hold said stop arms with the lugs 96 out of the path of the stop 94. Said stop arms are each provided with a curved cam surface 97 which is adapted to engage a transverse bar 97^a secured to the rocking frame 89^b which operates the escape mechanism. When the button 95^c located on the forward end of one of the stop arms 95 is pressed rearwardly, the lug 96 at the rear end of the stop arm is swung into the path of the stop 94 and at the same time the cam surface 97 by its engagement with the bar 97^a rocks

the escapement operating frame 89^b to release the carriage, which, under the influence of the spring-controlled barrel 92 is fed to the right until brought to rest by the engagement of the stop 94 against the lug 96 on said stop arm. It is apparent that by means of this construction the carriage may be instantly brought into position to write on the required check strip by operating the stop arm which is located in line with it. The carriage is brought into position to write upon the first or left hand check strip by moving it to its extreme left hand position.

We now pass to a description of the inking mechanism by means of which each impression is made both on the check strip and the record strip. Located above the platen in the writing space 77^v is an ink ribbon 100 which passes over the top of all the check strips in a direction transversely of the frame, and then passes backward between said check strips and the record strip. It is apparent that by this arrangement when the type bars descend the impression of the type will be made on both the check strip and the record strip. The ribbon 100 passes about a guide roller 100^a which is mounted in any convenient manner at the right of the right hand end check strip. The ends of said ribbon are wound upon spools 101, 102, which are keyed to shafts 101^a, 102^a, extending longitudinally of the casing and journaled in rock-arms 103, 103 carried at opposite ends of a rock-shaft 107 which is pivotally mounted in vertical standards 104, 104 supported on the top wall of the casing. 101^b, 102^b are gears keyed respectively to the forward ends of the shafts 101^a, 102^a. Said gears are adapted to be brought separately into engagement with a transversely extending rack-bar 105 which is secured to the typewriter carriage and projects laterally therefrom (see Fig. 1), said movement being brought about by rocking the frame comprised by the rock arms 103 and the rock shaft 107.

106 is a collar keyed to the rock-shaft 107. The periphery of said collar is provided with diametrically opposed, transverse notches or grooves 106^a, 106^a which are adapted to be engaged by the curved upper ends 106^b, 106^b of flat vertical springs 106^c, 106^c secured to the top of the casing. Said grooves and springs are so arranged that when the curved upper end 106^b of one of said springs engages the corresponding groove or notch 106^a of the collar 106 the gear 102^b will be held in engagement with the rack 105, whereas when the other spring arm engages the opposite groove in said collar the gear 101^b will engage said rack. In the first case the ribbon is wound upon the spool 102 and unwound from the spool 101, and in the second case the ribbon is

wound upon the spool 101 and unwound from the spool 102. A spring brake 107^a is arranged to bear against the ends of the spools to prevent that one which is being unwound from running away. It is apparent that the ribbon will be fed as the carriage is moved under the action of the letter spacing mechanism so as to bring a fresh part of the ribbon each time a key lever is operated under the type, and by bringing one or the other of the gears 101^b, 102^b, into engagement with said rack, said ribbon will be fed either in one direction or the opposite direction.

As will be seen in Fig. 1, the platen is longer than the combined width of the check strips and over its right-hand end is arranged a tablet plate 110 which is provided with a transverse slot 110^a above said platen. This tablet gives a hand rest so that hand-written memorandum as, for example, the name of a person charged, may be written on the record strip through the slot 110^a. Said tablet plate is bent downward at its forward edge at 110^b and is secured to the rail 77^a of the plate 45. Its rear margin is secured to the transverse bar 57.

The check strips are preferably made of different colors to distinguish them; as, for example, in the present case a white check strip 53, is used for a cash sale; a red check 54, for a charge sale; a blue check 55, for money paid out of the cash drawer, and a yellow check 56, for money received on account. The different checks may also have printed upon them the words "Cash"; "Charge"; "Paid out"; "On account." The record strip would be of substantially the width of the platen so as to extend under the opening 110^a in the tablet 110.

While we have shown herein a typewriter carrier provided only with ten keys it is, of course, apparent that more keys might be provided on the movable carriage as, for example, if desired, a complete alphabet, or keys operating type which carry marks to indicate the clerk or employee who makes the sale or other transaction.

The operation of the device is as follows: The carriage may be pulled by hand in the ordinary way to the left to bring it to its left hand position when it will be in the proper position to write upon the left hand check strip; in this case, the white check cash strip 53. When a cash sale is made, the proper key is pressed to write the amount of the sale on the check strip, in this case, the cash check strip, whereupon the key 67^a on the rod 65 corresponding to this check strip is pressed inward as above described. This releases the cash drawer and permits it to open for the deposit of the cash and for the purpose of obtaining change if required, and at the same time the record strip is fed for-

ward to bring a fresh part thereof under the writing position 77 and the white cash strip is fed out to a position to be torn off against the rear edge of the flat check guide tube 44. The cash check is then torn off and handed to the customer. It will be understood that the check strip will be fed a longer distance in proportion to the record strip, as it is only necessary to feed the record strip a sufficient distance to provide proper vertical spacing between succeeding items, while the check or portion of the check strip torn off should be of sufficient length to be conveniently handled. The cash drawer is then closed and the machine is in readiness for the next purchase. Suppose that next someone comes in to whom is to be paid a sum of money. The stop arm 55 corresponding to the blue "paid out" check, in this case the third check strip from the left, 55, is operated which releases the escape mechanism and permits the carriage to move to the right until the stop 94 strikes the stop arm. The amount to be paid out is then written on the blue check strip by the typewriter and the key 67^a corresponding to the blue-check strip is pushed inward, which causes the cash drawer to open, the record strip to be fed, and the check to be delivered into position to be torn off as before. The amount to be paid out is then added, together with the "paid out" check, to the customer.

In case it is desired to make any memorandum in connection with any transaction, for example, in the one last cited of paying out money, where it will probably be desirable to write the name of the party to whom the money is paid, a pencil memorandum may be written on the record sheet through the opening 110^a in the tablet 110, this being done before the key is pressed to deliver the check. The name will thus be written on the record sheet in the same line with the amount indicated as paid out on the record sheet.

The examples here given of the use of the machine will illustrate fully its operation. Every transaction made will appear in its proper column on the record sheet and it will be apparent that at the end of the day a complete record of all the transactions made during the day will appear on the record strip. The machine thus does everything that may be required of a cash register, except add and subtract various amounts from the transactions of the cash drawer. The amounts taken in, however, may be easily added and the amounts paid out subtracted therefrom, on the record sheet. The result will tally with the amount in the cash drawer.

While in describing our invention we have given and described in detail one embodiment of our invention, it will be apparent

to those familiar with the art that the mechanical construction and arrangement may be variously modified without departing from the spirit of our invention, and we do not wish to be limited to the details of construction illustrated in the drawings except as pointed out in the appended claims.

We claim as our invention:—

1. In a cash register, in combination, a spring-controlled cash drawer, means for locking said cash drawer in closed position, a rotatable platen over which a record strip and a plurality of check strips arranged side by side are adapted to be fed, a typewriter carriage provided with type-bars and type keys adapted to print on said platen, said carriage being movable in the direction of the length of said platen, a plurality of keys, one for each check strip, and mechanism operated by said keys adapted to simultaneously feed one of said check strips and the record strip and to release said cash drawer locking means.

2. In a cash register, in combination, a spring-controlled cash drawer and means for locking it in closed position, a rotatable platen located above said cash drawer, over which platen a record strip and a plurality of check strips located side by side are adapted to be fed, means for feeding said record strip, means for feeding and delivering each of said check strips, a movable typewriter carriage provided with type keys and type-bars adapted to write on said platen, letter-spacing mechanism adapted to feed said carriage in the direction of the length of said platen, and a plurality of keys, one for each check strip, each of said keys being adapted to simultaneously operate the record feeding mechanism, the check strip feeding and delivering mechanism and to release the cash drawer locking means.

3. In a cash register, in combination, a casing, a spring-controlled cash drawer located in said casing and means for locking it in closed position, a rotatable platen supported transverse of said casing, over which platen a record strip and a plurality of check strips located side by side are adapted to be fed, mechanism for feeding said record strip a predetermined length, independent mechanism for feeding and delivering each of said check strips a predetermined length beyond said platen, a movable typewriter carriage provided with type keys and type-bars adapted to write on said platen, letter-spacing mechanism adapted to feed said carriage in the direction of the length of said platen, and a plurality of keys, one for each check strip, each of said keys being adapted to simultaneously operate the record feeding mechanism, the check strip feeding and delivering mechanism and to release the cash drawer locking means.

4. In a cash register comprising a nor-

mally locked, spring-controlled cash drawer,
 a rotatable platen located above said cash
 drawer, over which platen a record strip and
 a plurality of check strips located side by
 side are adapted to be fed, and typewriting
 means adapted to write on said platen,
 means for independently feeding and deliv-
 ering each of said check strips embracing
 means for rotatively supporting a supply
 roll from which said check strip is fed, a
 feed roll intermediate said platen and said
 supply roll, supporting means, a flat guide
 tube adapted to direct said check strip over
 and in engagement with said feed roll and
 said platen, said guide tube being provided
 with an opening in the printing space above
 said platen and with an opening above said
 feed roll, a spring-controlled friction roll
 adapted to project through said second open-
 ing in said guide tube and hold said check
 strip in frictional engagement with said feed
 roll, a gear co-axial with said feed roll,
 clutch means intermediate said gear and said
 feed roll adapted to lock said feed roll and
 gear together when said gear is turned in
 one direction but to permit independent
 movement of said gear when turned in the
 opposite direction, a segmental gear in mesh
 with said gear, a spring-controlled rock-arm
 carrying said segmental gear, and means in-
 cluding a key for rocking said rock-arm.

5. In a cash register, in combination, a
 spring controlled cash drawer, means for
 locking said cash drawer in closed position,
 a rotatable platen over which a record strip
 and a plurality of check strips arranged side
 by side are adapted to be fed, a typewriter
 carriage provided with type-bars and type
 keys adapted to print on said platen, said
 carriage being movable in the direction of
 the length of said platen, a plurality of keys,
 one for each check strip, mechanism oper-
 ated by said keys adapted to simultaneously
 feed one of said check strips and the record
 strip, and means for releasing said cash
 drawer locking means.

6. In a cash register, in combination, a
 spring controlled cash drawer and means for
 locking it in closed position, a rotatable
 platen located above said cash drawer, over
 which platen a record strip and a plurality
 of check strips located side by side are adapt-
 ed to be fed, means for feeding said record
 strip, means for feeding and delivering each
 of said check strips, a movable typewriter
 carriage provided with type keys and type
 bars adapted to write on said platen, letter-
 spacing mechanism adapted to feed said
 carriage in the direction of the length of
 said platen, and a plurality of keys, one
 for each check strip, each of said keys being
 adapted to simultaneously operate the record
 feeding mechanism and the check strip feed-
 ing and delivering mechanism, and means
 for releasing said cash drawer locking means.

7. In combination, a rotatable platen,
 over which a record strip and a check strip
 are adapted to be simultaneously fed, the
 one strip above the other, means for rota-
 tively supporting a supply roll from which
 said record strip is fed to the platen, a re-
 wind shaft located beyond the platen adapt-
 ed to rewind the record strip after it leaves
 the platen, means for intermittently rotat-
 ing said rewind shaft through a predeter-
 mined angle including a ratchet, a spring-
 controlled pawl engaging said ratchet, and
 a rock arm carrying said pawl, means for
 rotatively supporting a supply roll from
 which said check strip is fed, a feed roll
 intermediate said check supply roll and said
 platen about which said check strip passes
 on its way to said platen, means for holding
 said check strip in frictional engagement
 with said feed roll, a flat guide tube adapt-
 ed to direct said strip about said feed roll
 and said platen, a gear co-axial with said
 feed roll, means for locking said gear to said
 feed roll when said gear is rotated in one
 direction, said means permitting said gear
 to rotate independently in the opposite di-
 rection, a segmental gear meshing with said
 gear, a rock-arm carrying said segmental
 gear, and means including a key for simul-
 taneously rocking said first and second
 named rock-arms.

8. In a cash register, in combination with
 a cash drawer and means for locking the
 same in closed position, a rotatable platen
 over which a record strip and each of a
 plurality of check strips are adapted to be
 simultaneously fed, means for intermittently
 feeding said record strip a predetermined
 length, independent means for intermit-
 tently feeding each of said check strips a pre-
 determined length different from that of the
 feed of the record strip, a plurality of keys,
 one for each check strip, and mechanism
 operated by said keys adapted to simultane-
 ously actuate the feeding means for said
 record strip and the feeding means for said
 check strip and to release the cash drawer
 locking means.

9. In combination, a platen, over which a
 check strip is adapted to be fed, means for
 rotatively supporting a supply roll from
 which said check strip is fed, a feed roll
 intermediate said check supply roll support-
 ing means and said platen about which said
 check strip passes on its way to said platen,
 means for holding said check strip in fric-
 tional engagement with said feed roll, a flat
 guide tube adapted to direct said strip about
 said feed roll and said platen, a gear co-
 axial with said feed roll, means for locking
 said gear to said feed roll when said gear is
 rotated in one direction, said means permit-
 ting said gear to rotate independently in the
 opposite direction, a segmental gear meshing
 with said gear, a rock-arm carrying said

segmental gear, and means including a key for rocking said rock-arm.

10. In combination, a platen, over which a check strip is adapted to be fed, means for rotatively supporting a supply roll from which said check strip is fed, a feed roll intermediate said supply roll supporting means and said platen about which said check strip passes on its way to said platen, a flat guide tube adapted to direct said strip about said feed roll and said platen, said guide tube being provided with openings above said platen and above said feed roll, means for holding said check strip in frictional engagement with said feed roll, a shaft on which said feed roll is loosely mounted, a gear loosely mounted on said shaft adjacent to said feed roll, clutch teeth formed on the adjacent faces of said feed roll and gear adapted to lock said gear to said feed roll when said gear is turned in one direction, said clutch teeth permitting said gear to rotate independently when turned in the opposite direction, resilient means adapted to hold said clutch teeth in engagement, a segmental gear meshing with said gear, a rock arm carrying said segmental gear, a longitudinally reciprocable rod pivotally connected to said rock arm and adapted to rock the same, and a key formed at the end of said rod.

11. In combination, a platen, over which a check strip is adapted to be fed, means for rotatively supporting a supply roll from which said check strip is fed, a feed roll intermediate said supply roll supporting means and said platen about which said check strip passes on its way to said platen, a flat guide tube adapted to direct said strip about said feed roll and said platen, said guide tube being provided with openings above said platen and above said feed roll, spring controlled friction roll adapted to engage said feed roll through the second medial opening in said guide tube, a shaft on which said feed roll is loosely mounted, a gear loosely mounted on said shaft adjacent said feed roll, clutch teeth formed on the adjacent faces of said feed roll and gear adapted to lock said gear to said feed roll when said gear is turned in one direction, said clutch teeth permitting said gear to rotate independently when turned in the opposite direction, resilient means adapted to hold said clutch teeth in engagement, a segmental gear meshing with said gear, a rock arm carrying said segmental gear, a longitudinally reciprocable rod pivotally connected to said rock-arm and adapted to rock the same, and a key formed at the end of said rod.

12. Means for independently feeding a plurality of check strips from a plurality of supply rolls including a plurality of feed rolls, one for each check strip, a shaft on

which said feed rolls are loosely mounted, collars keyed to said shaft adapted to hold said feed rolls in spaced relation, spring-controlled friction rolls, one for each feed roll, adapted to engage and hold said check strips in engagement with said feed rolls, a plurality of gears, one located adjacent each feed roll, said gears being loosely mounted on said shaft, clutch teeth formed on the adjacent faces of said feed rolls and said gears constructed to lock each gear to its feed roll when the gear is rotated in one direction but to slide loosely by each other when said gear is rotated in the opposite direction, springs adapted to hold said clutch teeth in engagement, and means for intermittently rotating said gears through predetermined angles.

13. In a cash register, in combination with means for feeding a record strip, means for independently feeding each of a plurality of check strips, a plurality of longitudinally reciprocable rods, one for each check strip, each rod adapted to operate the feeding means of one of said check strips, arms carried by said rods, a transverse rock-bar adapted to be engaged by each of said arms, a rock-shaft carrying said transverse rock-bar, and a rock-arm operatively connected to said record feeding means.

14. In a cash register, in combination with a casing, a platen supported on said casing over which platen a plurality of check strips arranged side by side are adapted to be fed, a movable carriage mounted on said casing and provided with typewriter mechanism adapted to write on said platen, letter-spacing mechanism adapted to feed said carriage, a stop located on said carriage, and a plurality of spring-controlled stop arms pivotally mounted on said casing, said stop arms having projections adapted to be swung into the path of said stop, and means intermediate said stop arm and said letter-spacing mechanism adapted to release said letter-spacing mechanism when said stop-arms are operated.

15. In combination, a cash register casing, a platen supported on said casing over which platen a plurality of check strips arranged side by side are adapted to be fed, a movable carriage mounted on said casing and provided with typewriter means adapted to write on said platen, escapement mechanism including a rack bar secured to said typewriter carriage and a rocking frame pivotally mounted on said casing in operative position with reference to said rack-bar, a stop on said carriage, a spring-controlled stop arm pivotally mounted on said casing in front of said carriage, said stop arm having projections adapted to be swung into the path of said stop, a bar carried by said rocking frame, and a cam carried by said stop arm adapted to engage said bar and

release said escape mechanism when said stop arm projection is swung into the path of said stop.

16. In a cash register, in combination with
5 a spring-controlled cash drawer, means for locking said drawer in closed position embracing a plate secured to said drawer provided with a slot, a reciprocable rod adapted to engage the slot in said plate, a cam member rigidly secured to said rod, a rock-arm
10 pivoted on said rod and through which said rod is adapted to slide, said rock arm having a hub provided with a cam surface engaging the fixed cam member on said rod, means
15 for holding said rod yieldingly in engagement with said slot in said plate, and means for rocking said rock arm to withdraw said rod from its engagement with said slot.

17. In a cash register, in combination with
20 a spring-controlled cash drawer, means for locking said drawer in closed position embracing a plate secured to the rear end of said drawer, said plate being provided with a longitudinal slot and being downwardly
25 curved at its rear end, a reciprocable rod having a beveled end normally engaging within said slot, a bracket provided with longitudinally separated arms in which said rod is supported, a rock-arm provided with
30 a hub rotatably and slidably mounted on said rod, said hub resting on one of said bracket arms, a fixed member secured to said rod and engaging the hub of said rock-arm, and means for holding said fixed member
35 yieldingly in engagement with said hub

member, the engaging faces of said hub member and fixed member being constructed to withdraw said rod from said plate when said rock-arm is rocked in one direction.

18. In combination, means for independently feeding each of a plurality of strips
40 side by side from supply rolls, a plurality of spools upon which said supply rolls are mounted, a shaft on which said spools are rotatably mounted, flanges formed at one
45 end of each spool, a back ratchet rotatably mounted on said shaft adjacent the flangeless ends of said spools, a fixed pawl engaging said ratchet, washers loosely mounted on
50 said shaft intermediate said back ratchets and the adjacent flanged ends of said spools, resilient means located on said shaft adapted to hold said spools, back ratchets and washers in yielding, end engagement with
55 each other.

In testimony that we claim the foregoing as our invention, we affix our signatures in the presence of two witnesses, the said
JOSHUA LINCOLN MORRIS, on the 20th day of
April A. D. 1910, and the said WILLIAM D. JAMIESON, on the 25th day of April A. D.
1910.

JOSHUA LINCOLN MORRIS.
WILLIAM D. JAMIESON.

Witnesses to Morris's signature:

ROBT. B. WALLACE,
JNO. W. CAMP.

Witnesses to Jamieson's signature:

N. CURTIS LAMMOND,
A. M. BUNNS.