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Zofchak

[11] **3,826,190**

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[54] **PRINT WHEEL SETTING AND KEYLEVER RESET MEANS IN PRINTING MACHINES**

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[22] Filed: **July 18, 1973**

[21] Appl. No.: **380,493**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 235,896, March 20, 1972, abandoned.

[52] **U.S. Cl.** **101/45,** 101/56, 101/426

[51] **Int. Cl.** **B41j 7/02**

[58] **Field of Search** 101/45, 99, 110, 72, 80, 101/55, 56

[56] **References Cited**

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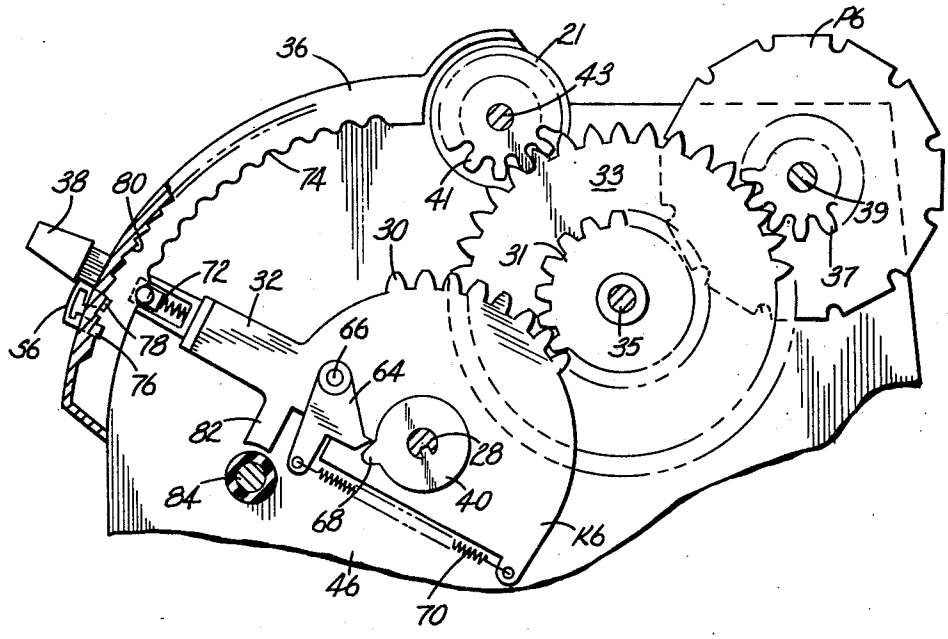
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Primary Examiner—Robert E. Pulfrey
Assistant Examiner—Edward M. Coven
Attorney, Agent, or Firm—Ray S. Pyle

[57] **ABSTRACT**

A printing machine for imprinting forms with fixed data from embossed printing plates and variable data from manually settable print wheels by moving a platen from a start position across the printing elements to an actuated position to perform a printing operation and back to the start position to complete a printing cycle. The print wheels are selectively positionable by keyset levers movable from a blank position to a selected position for rotating each of the print wheels to a desired peripheral setting. Adjustable stop means is associated with each of the keyset levers and is manually settable from a home position to a selective preset keylever blocking position at which it is desired to maintain the corresponding keylever for subsequent repetitive printing operations. Reset means is also provided for simultaneously restoring all of the keyset levers to the blank position, except those which have been blocked against movement by the stop means, during return movement of the platen from the actuated to the start positions.

5 Claims, 8 Drawing Figures



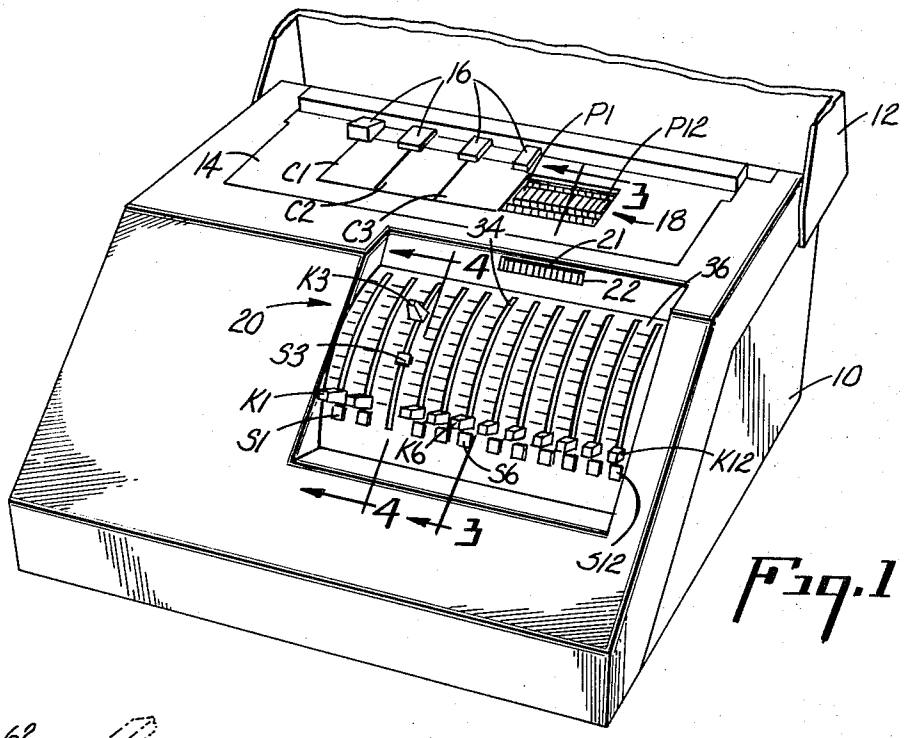

16
P1
P12
12
14
C1
C2
C3
34
21
18
3
4
22
36
K3
20
S3
K1
S1
K6
S6
K12
10
4
3
S12

Fig. 1

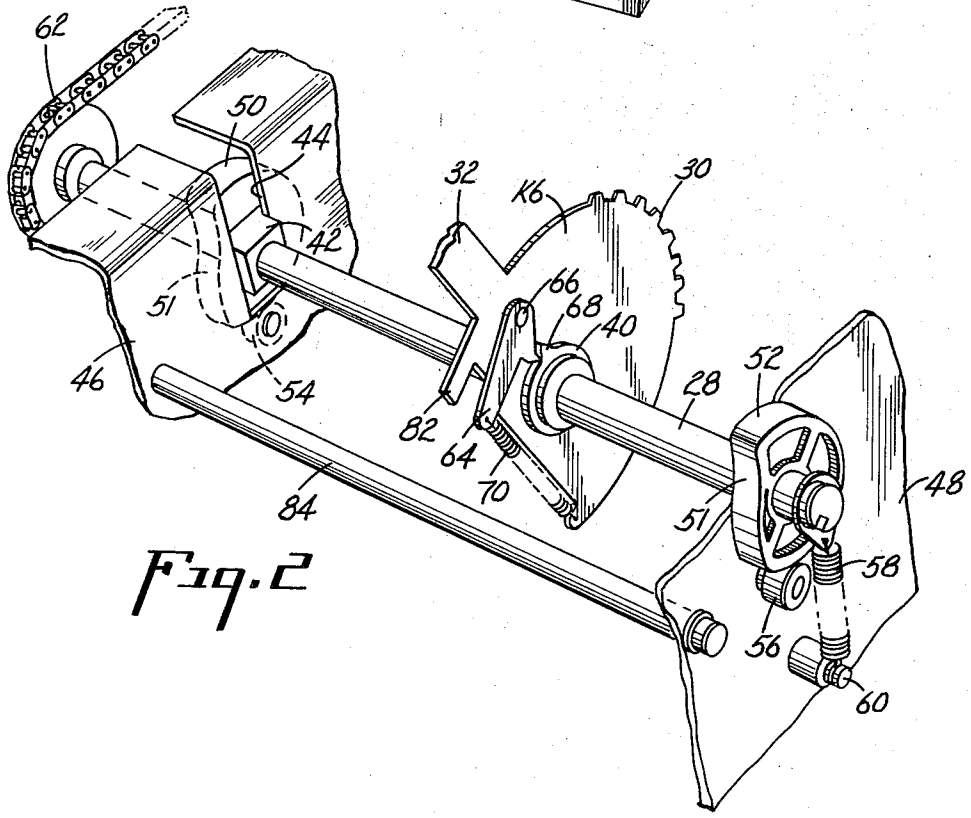

62
50
44
42
32
K6
30
66
68
40
52
28
51
46
54
82
64
70
84
51
48
58
56
60

Fig. 2

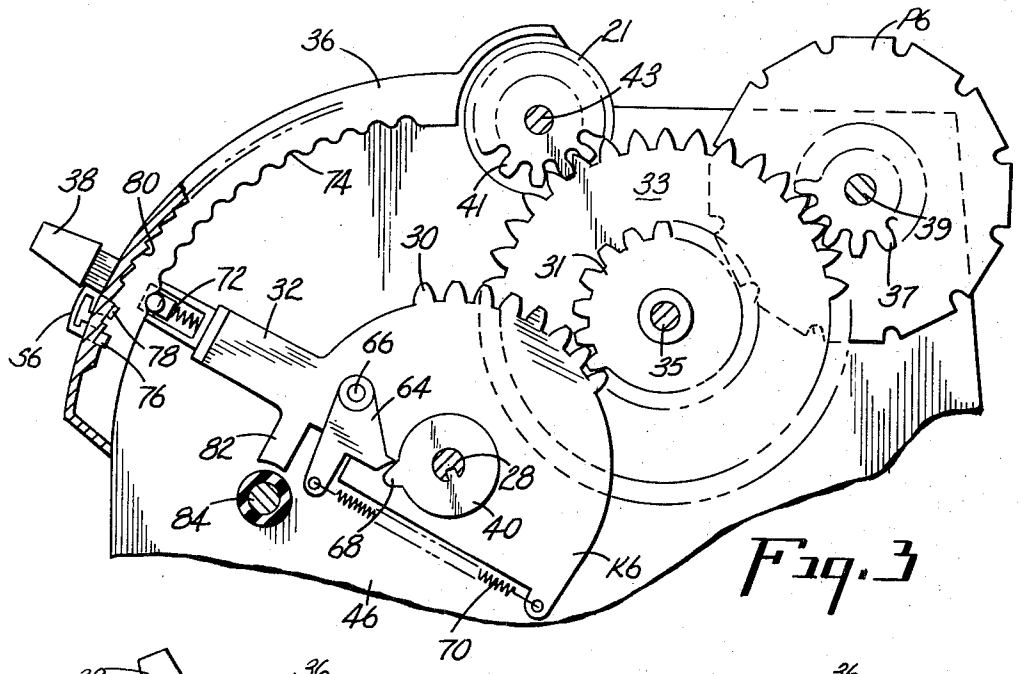


Fig. 3

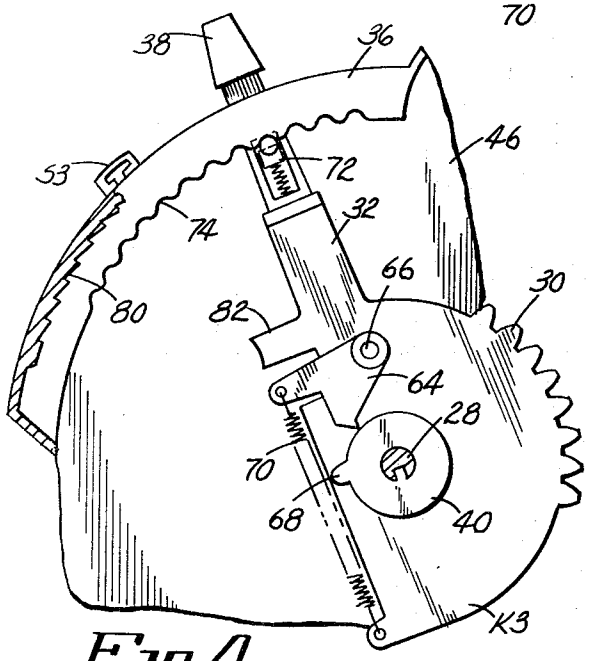


Fig. 4

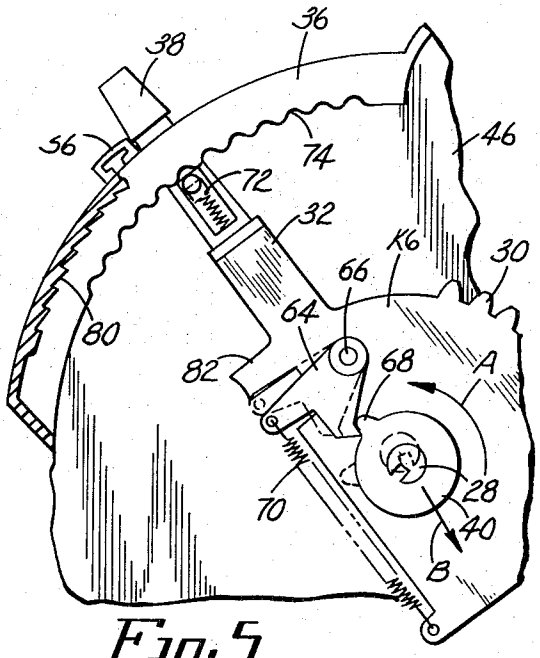


Fig. 5

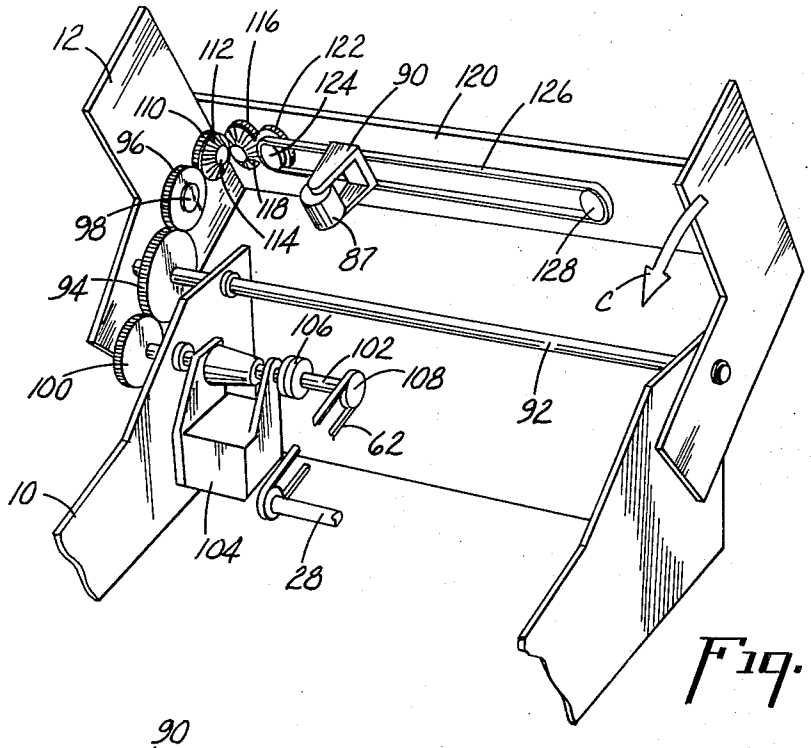


Fig. 6

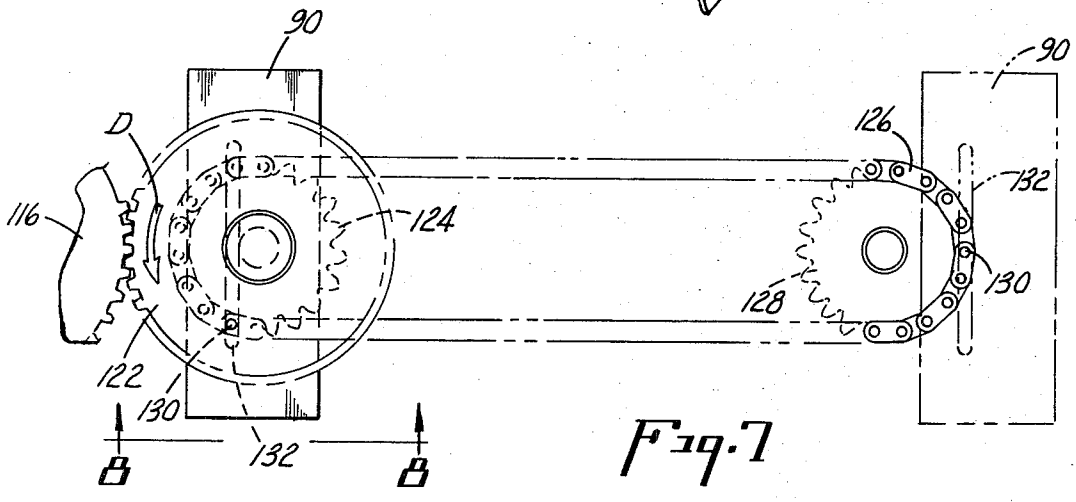


Fig. 7

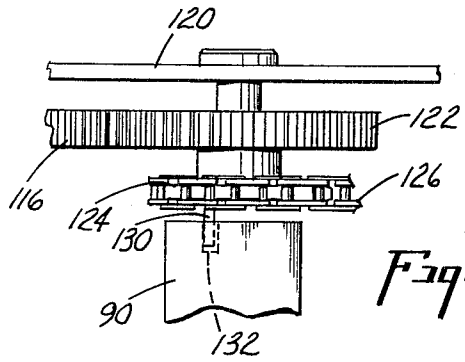


Fig. 8

PRINT WHEEL SETTING AND KEYLEVER RESET MEANS IN PRINTING MACHINES

RELATED APPLICATION

This application is a continuation-in-part of application Ser. No. 235,896, filed Mar. 20, 1972, now abandoned.

BACKGROUND OF THE INVENTION

The present invention relates to a printing machine and, more particularly, to a data recorder for imprinting forms with fixed data from printing plates and variable data and repetitive data from selectively settable print wheels.

Data recorders have come into wide-spread usage, not only for credit transactions but also for tool crib, stock room and similar applications normally associated with factory operations. These data or shop recorders are utilized to record stock item part numbers, quantities, department numbers, name and/or identification number of the person withdrawing the stock or borrowing the tools, etc. Accordingly, it will be recognized that some of these data to be recorded are repetitive variable data and remain unchanged from one printing operation to another, while other of the data to be recorded are non-repetitive variable data and require resetting prior to each printing operation.

Desirably, the data are generally imprinted in human readable as well as machine readable form to provide imprinted documents suitable for subsequent machine scanning. Although printing machines for use in such applications are available and currently in use, many of these machines are adapted to imprint stylized optical character recognition (OCR) characters and not machine scannable coded data. Because of the high cost of OCR scanning equipment, the use of OCR imprinting machines is limited to the larger installations having a sufficient volume to justify the cost.

Still other printing machines are available for use in applications such as above and are arranged for imprinting forms with machine scannable coded data in the form of imprinted bar codes. These machines have been favorably received because of the clear and accurate impressions produced on the forms and, also, because of the substantially lower cost of the scanning equipment required (as compared to OCR scanning equipment) which makes them well suited for use by the medium and small volume organizations.

Normally, these bar code imprinting machines are arranged to print from one or more removably replaceable printing plates and from manually settable variable data print wheels. The printing plates are provided with human readable and bar code printing data, and the print wheels are provided with similar data in a relief printing configuration.

Some of the existing data recorders include a print wheel interlock mechanism requiring at least one of the print wheels to be reset following an immediately preceding printing operation to condition the machine for a subsequent printing operation. This is a desirable feature in that it prevents the machine operator from inadvertently printing a form with variable data which have been set for a prior printing operation. However, in those applications referred to above, at least some of the variable data to be imprinted are repetitive and remain constant for a series of printing operations.

Therefore, the additional operation of having to reset all of the print wheels after each printing operation, as required with machines equipped with a print wheel interlock mechanism, even though some of the data may not require changing for imprinting the next form, is not ideally suited to such applications.

From the foregoing, it would appear that a stock room application, for example, could best be handled by utilizing a data recorder having variable data print wheels but excluding the print wheel interlock mechanism. Such machines are available and well known. However, for the reason directly contrary to that expressed above of having to reset all of the print wheels after each printing operation as required with machines equipped with print wheel interlock mechanisms, machines without the interlock mechanism do not provide the desired results of avoiding inadvertent printing of variable data from a prior setting because they are subject to operation in those instances where the machine operator has failed to reset the variable data, thereby recording a new transaction using the information set into the print wheels for a previous transaction.

SUMMARY OF THE INVENTION

The present invention provides a data recorder in which the repetitive variable data desired to be maintained constant from one printing operation to another may be selectively preset. In response to a printing cycle, the preset repetitive variable data remain unchanged and all of the other variable data keyset levers are restored to a blank position in readiness for subsequent setting by the machine operator for another printing operation.

An object of the invention is to provide a data recorder for imprinting information from one or more printing plates and variable data print wheels, with means to maintain desired print wheels at preset positions for subsequent repetitive printing operations, and reset means for restoring to the blank position only those keyset levers and associated print wheels not so conditioned, in response to a printing cycle.

Another object of the invention is to provide a power operated data recorder comprising a plurality of variable data print wheels selectively settable under control of manually operable keyset levers. An adjustable stop means is associated with each of the keyset levers and is also selectively settable to any blocking position at which it is desired to maintain the keyset lever, and its corresponding print wheel, for subsequent printing operations. A keyset lever restoring means is provided for returning to the blank position all of the keyset levers which have not been blocked by the stop means, while maintaining the positions of the other keyset levers unchanged, following each printing cycle of the machine.

IN THE DRAWINGS

FIG. 1 is a top, front-right perspective view of a data recorder in accordance with the present invention, with the platen carriage omitted for clarity and showing the printing head partially broken away;

FIG. 2 is a perspective view of one keyset lever and related mechanism for restoring the keyset lever to a blank position;

FIG. 3 is a section taken substantially along the plane designated by line 3—3 of FIG. 1;

FIG. 4 is a section taken substantially along the plane designated by line 4—4 of FIG. 1;

FIG. 5 shows the keyset lever of FIG. 3, but moved from a blank position of FIG. 3 to a preset position for repetitive operation, with the parts associated with the keyset lever being shown in the positions they would assume during a resetting operation;

FIG. 6 is a perspective view, partially broken away, showing the platen carriage and the drive means therefor;

FIG. 7 is a plan view of the platen carriage and the drive means of FIG. 6; and

FIG. 8 is a section taken substantially along the plane designated by the line 8—8 of FIG. 7.

DESCRIPTION OF THE PREFERRED EMBODIMENT

As shown in FIGS. 1 and 6, the data recorder comprises a base 10 and a printing head 12 for supporting a platen carriage 90 carrying a roller platen 87. The platen carriage 90 and the drive therefor may be selected from common manually driven devices. However, to provide a full understanding of the present invention, a description of the platen carriage and its drive means is also included hereinafter. The printing head 12 is pivotally mounted on the base 10 for movement between an open non-printing position and a closed printing position. With the printing head 12 in the closed position, the platen carriage 90 is moved from a start position to an actuated position to perform a printing operation and back to the start position to complete a printing cycle.

The base 10 includes a bed 14 provided with retainers 16 for releasably holding printing plates C1, C2 and C3, and a series of variable data print wheels indicated generally at 18 and designated individually as P1 to P12 from left to right as viewed in FIG. 1.

As shown in FIG. 3, each of the print wheels P1–P12 includes 12 faces representing a blank face, a special code printing face and the digits 0–9 inclusive. Positioning means comprising a bank of keyset levers indicated generally at 20 in FIG. 1 is provided with one lever for selectively positioning each of the corresponding print wheels P1–P12.

As shown in FIG. 1, the keyset levers 20 are designated as K1–K12 as viewed from left to right. A selectively positionable blocking means or stop device is associated with each of the keyset levers K1–K12 and, as viewed from left to right in FIG. 1, the stop devices are designated as S1–S12. Still referring to FIG. 1, except for the keyset lever K3 and its associated stop device S3 all of the other keyset levers are shown in a blank position and all of the other stop devices are shown in a home position.

Indexing wheels 21, viewable through a window 22 as shown in FIGS. 1 and 3, provide the machine operator with a visual indication of the setting of the print wheels 18 for a printing operation.

Because all of the keyset levers 20 are identical in operation and construction only the keyset levers K3 and K6 (because they are shown in different positions) and their related mechanisms will be described in detail hereinafter. Thus, FIGS. 2 and 5 show the keyset lever K6 moved from its blank position as shown in FIGS. 1 and 3 to a preset position for repetitive operation. The parts associated with the keyset lever K6 are shown in FIG. 2 in the positions they would assume during a printing operation, and in FIG. 5 the parts are shown in the positions they would assume during a resetting operation, i.e., during return movement from selected printing positions to the blank positions of those keyset levers which have not been set for repetitive operation. FIG. 3 shows the keyset lever K6 in the blank position and FIG. 4 shows the keyset lever K3 in a selective variable position prior to return of the stop device S3 to the home position.

With reference to FIG. 3, the keyset lever K6 is pivotally supported on a control shaft 28. The keyset lever K6 is provided with a gear segment 30 in mesh with a pinion 31 of a compound gear 33. Gear 33 is rotatably supported on a shaft 35. The gear 33 meshes with a pinion 37 affixed to the print wheel P6 rotatably mounted on a shaft 39 and, also, with a pinion 41 affixed to the indexing wheel 21 rotatably supported on a shaft 43. Thus, as the keyset lever K6 is moved through an arc from the blank position of FIG. 3 to any desired position 0–9 including the special code position, the gear train described hereinabove is effective to rotate the print wheel P6 to the selected printing position and the indexing wheel 21 to the corresponding position indicating the setting of the selected printing position.

The keyset lever K6 is also provided with a stem 32 extending upwardly through a guide slot 34 (FIG. 1) provided in a cover plate 36 enclosing the keyset levers 20. The end of the stem 32 is provided with a finger grip 38 to facilitate manual movement of the keyset lever 16 to any selected position.

As shown in FIG. 2, the keyset lever K6 is journalled on a shoulder portion of a reset cam 40 and the reset cam is keyed to the control shaft 28 for rotation therewith. In this way, the control shaft 28 and the reset cam 40 are rotated together but independently of the keyset lever K6. The control shaft 28 is supported at each end in a floating bearing 42 (only one shown in FIG. 2) adapted for sliding movement in a groove 44 provided in each of a pair of side plates 46 and 48. A control cam 50 is fixed on the control shaft 28 at a position externally of the side plate 46 and a similar control cam 52 is fixed at the other end of the control shaft 28 at a position externally of the side plate 48. The control cams 50 and 52 coact with follower rollers 54 and 56 respectively, mounted on the side plates 46 and 48 respectively. The control shaft 28 is normally urged downwardly, to maintain the control cams 50 and 52 against their respective followers 54 and 56, by a pair of springs 58 (only one shown in FIG. 2) connected to the ends of the control shaft 28 and a pin 60 provided in each of the side plates 46 and 48. The control shaft 28 is driven through a single revolution during each printing cycle by a chain drive 62, under control of a one revolution clutch 106, as shown in FIGS. 2 and 6.

The keyset lever K6 is further provided with a drive pawl 64 pivotally mounted at 66 at a position to coact with a lobe 68 of the reset cam 40. A spring 70 biases the drive pawl 64 in a counterclockwise direction as viewed in FIGS. 2–5 to normally maintain the drive pawl 64 in the path of the rotatable reset cam 40.

See FIG. 3. A releasable retaining means comprising a spring-loaded ball detent 72 is provided on the stem 32 of the keyset lever K6 and is adapted to coact with detent notches 74 provided on the underside of the cover plate 36, as shown in FIGS. 3–5. The ball detent 72 rides in the detent notches 74 as the keyset lever K6

is moved to a desired selected position and maintains the keyset lever K6 in the set position.

The stop device S6 is preferably made of resilient material and is provided with a pair of lugs 76 and 78 which engage teeth 80 on the underside of the cover plate 36 to maintain the stop device S6 in a selected blocking position. The stop device S6 is movable in the slot 34 of its corresponding keyset lever K6. Depressing the resilient stop device releases the lugs 76 and 78 from holding engagement with the teeth 80 to permit the stop device to be moved to any selected position between its home position and a position at which the keyset lever K6 is in the digit 9 position. On release of the stop device S6, it is again locked in position by the lugs 76 and 78 coacting with the teeth 80.

As shown in FIGS. 3–5, there are twelve detent notches 74 corresponding to the 12 faces on each of the print wheels P1–P12. Thus, the lower most detent notch 74 represents the blank position of the keyset lever K6, the next detent notch may represent the special code position and the remaining detent notches represent positions 0–9 in sequential order.

However, because the stop device S6 is positioned for movement in the common slot 34 with the keyset lever K6, and the stop device is in its home position immediately below the finger grip 31 when the keyset lever K6 is in its blank position, it is necessary to position the stop device at one position short of the position at which it is desired to set the keyset lever K6. For example, if the keyset lever K6 is to be positioned for the repetitive printing of zero, the keyset lever K6 would be moved from the blank position to the second detent notch 74 and the stop device 86 would be moved to the blank position vacated by the keyset lever K6. Further, if the keyset lever K6 is to be maintained in the digit 3 position as shown in FIG. 5, the keyset lever K6 is moved to the sixth detent notch 74, which would place the finger grip 38 opposite the numeral 3 designation on the keyboard, and the stop device S6 is set up against the finger grip 38 to occupy a position opposite a numeral 2 designation. With the keyset lever K6 so positioned against the stop 86, the keyset lever K6 and its corresponding print wheel P6 are blocked against movement toward the blank position and will remain in the set position for subsequent printing operations until such time as the keyset lever K6 and its associated stop S6 are manually reset to a new position.

The platen carriage 90 and the drive means for the carriage will now be described with reference to FIGS. 6, 7 and 8.

As shown in FIG. 6, the printing head 12 is pivotally supported on a rod 92, mounted in the base 10, for swinging movement between the open position of FIG. 6 and a closed printing position against the base 10 by moving the printing head in the direction of arrow C.

The rod 92 is provided at one end with a freely rotatable gear wheel 94 in mesh with a gear 96 and a drive pinion 100. The gear 96 is supported on a stub shaft 98 on the printing head 12 and the drive pinion 100 is mounted on a drive shaft 102 of a motor 104.

Also mounted on the drive shaft 102 are a sprocket 108 and the one-revolution clutch 106. The sprocket 108 drives the chain 62 which, through the clutch 106, drives the control shaft 28 through a single revolution.

Referring to FIG. 6, the gear 96 is in rolling mesh engagement with the gear wheel 94 during the opening and closing movements of the printing head 12 and, additionally, is in mesh with a spur gear 110 integral with a miter gear 112 mounted on a stub shaft 114 on the printing head 12. Thus, the rolling action of the gear 96 with the freely rotatable gear wheel 94 and the spur gear 110 maintains the gears in proper timed relationship during the opening and closing motion of the printing head 12.

Still referring to FIG. 6, there is further provided an intermediate spur gear 116 integral with a miter gear 118 supported on a cross rail 120 of the printing head 12. The spur gear 116 meshes with a spur gear 122 on the cross rail 120, and the miter gear 118 meshes with the miter gear 112 to thereby impart drive to the spur gears 116 and 122.

A sprocket 124, integral with the spur gear 122, and a sprocket 128 on the cross rail 120 support a chain 126. As will be further described hereinbelow, the platen carriage 90 is driven through a printing cycle by the chain 126.

From the description thus far, it will be seen that the drive shaft 102 drives the gear train comprising the gears 100, 94, 96 and 110, and through the miter gears 112 and 118 drives the spur gears 116 and 122 for driving the chain 126 and moving the platen carriage 90 through a printing cycle. Also, the drive shaft 102 drives the chain 62 for rotating the control shaft 28 through a single revolution during each printing cycle.

The manner in which the platen carriage 90 is driven through a printing cycle will now be described with reference to FIGS. 7 and 8. As shown therein, one of the links of the chain 126 is provided with a pin 130 extending outwardly therefrom (in a downward direction as viewed in FIG. 8) into an elongate recess 132 in the platen carriage 90. As the chain 126 is driven in the direction of arrow D, the pin 130 trapped in the recess 132 is effective to drive the platen carriage 90 from left to right as viewed in FIG. 7 to perform a printing operation.

When the platen carriage 90 arrives at the actuated position shown in phantom in FIG. 7, the chain 126 by virtue of its movement around the sprocket 128 carries the pin 130 upwardly within the recess 132 to a position within the recess whereby the pin 130 is effective to drive the platen carriage 90 in a return direction to the start position during continued drive of the chain 126. In response to arrival of the platen carriage 90 at the start position, a switch (not shown) is contacted and the motor 104 is deactivated and the machine is in condition for a subsequent printing operation with the pin 130 at a position within the recess 132 as shown at the left in FIG. 7.

The preferred embodiment causes the control shaft 28 to rotate as the platen carriage 90 returns to the start position. However, it is within the skill of the development engineer to provide a drive device which will be activated after the platen carriage has fully completed its printing cycle to restore those keyset levers which have not been set for repetitive operation to the blank positions.

A typical stock room application and the operation of the machine of the present invention will now be described. With reference to FIG. 1, the printing plate C1 may be provided with data identifying the department

issuing the stock, the printing plate C2 may be the borrower's plate and the printing plate C3 may identify the item being withdrawn from stock. After placement of the printing plates in printing position on the bed 14, the variable data to be printed by any or all of the print wheels P1–P12 are set up by selectively positioning the keyset levers K1–K12 to desired positions.

For example, the keyset levers K1 and K2 may be used for positioning the print wheels P1 and P2 for imprinting the part number of the item being withdrawn from stock, the keyset lever K3 for identifying the bin or shelf location of the item in the stock room, the keyset levers K4 and K5 for the quantity of the item being withdrawn, the keyset lever K6 for identifying the individual issuing the item from stock, the keyset lever K7 for the special code, for example, for reordering the item when the quantity reaches a low level, the keyset lever K8 for identifying the station at which the machine is being used and the keyset levers K9–K12 for the month and the day of the transaction.

With the keyset levers K1–K12 appropriately set for a specific application, the stop devices S1–S5 are left in their home positions (stop device S3 not shown in the home position in the drawing) because these data, in the above example, normally change from one transaction to another. The stop device 86 is moved against the finger grip 38 of the keyset lever K6 to maintain the keyset lever K6 in the set position for subsequent repetitive printing operations so long as the same person is issuing the stock and operating the machine. The stop device 87 would normally remain in its home position and, in those instances where reorder of the stock item is not required, the keyset lever K7 would remain in its blank position corresponding to a blank face of the corresponding print wheel P7. The stop device S8 would be moved against the finger grip 38 of the keyset lever K8 since this information remains constant for all machine operations as long as the machine is located at the same stock issuing station. The stop devices S9–S12 are moved against the finger grips 38 of their respective keyset levers K9–K12 since this information need only be changed once daily.

Thereafter, a carbon paper interleaved form, or a single part form if the machine is equipped with an inked ribbon or an ink impregnated platen, is placed in superposed relationship with the printing elements on the bed 14 and the printing head 12 is pivoted to its closed position against the bed 14. Closing of the printing head 12 activates the motor 104 which through the chain 126 drives the platen carriage 90 across the bed 14 to create an impression on the form from the printing elements and, also, through the chain drive 62 and the clutch 106 rotates the control shaft 28 through one revolution.

As the control shaft 28 rotates from the position shown in FIG. 3, in the direction of arrow A shown in FIG. 5, the chain 126 drives the platen carriage 90 through a printing operation across the bed 14 to the actuated position. Upon completion of the printing operation, the printing head 12 is caused to pivot to its open position but the motor 104 remains energized to continue driving the chain 126 to restore the platen carriage from the actuated position to its start position at the left end of the machine, as viewed in FIGS. 1 and 7, to complete the printing cycle. During this portion of the cycle (i.e. movement of the plate carriage 90 to the start position) the control cams 50 and 52 on the control shaft 28 have been rotated so as to present a dwell portion 51 on each of the control cams 50 and 52 against the follower rollers 54 and 56. With the control cams 50 and 52 in this position during the remainder of the cycle, the springs 58 are effective to displace the control shaft 28 by urging the control shaft downwardly in the direction of arrow B as shown in FIG. 5. This lowering action of the control shaft 28 also moves the keyset levers K1–K12 in the same direction thereby withdrawing the ball detents 72 out of engagement with the detent notches 74, from the position shown in FIG. 4 to the position shown in FIG. 5.

This arrangement reduces friction of the ball detents 72 riding in the detent notches 74 thereby lessening the force required to restore the keyset levers 20 to their blank positions and, also, reduces wear and noise that would be present if the ball detents 72 were not withdrawn from the detent notches 74 during return travel of the keyset levers 20 to their home positions.

Continued rotation of the control shaft 28 presents the lobe 68 of the reset cam 42 against the drive pawl 64 on each of the keyset levers K which have not been blocked by the stop devices S for repetitive printing operations. Thus, the reset cam 42 acting against the drive pawl 64 is effective to pivot the keyset lever in a counterclockwise direction as viewed in FIGS. 3–5, to restore each of the keyset levers to their home positions without interference by the ball detents 72 and the detent notches 74 which are still in a disengaged position. As the reset cam lobe 68 engages the drive pawl 64 of the keyset levers K which have been blocked by the stop devices S, as shown in FIG. 5, the drive pawl 64 is pivoted to the dotted line position against the bias of the spring 70 to permit further rotation of the reset cam 42 without effecting further movement or damage to the keyset levers K and related mechanism. On completion of a full revolution of the control shaft 28, the spring 70 restores the drive pawl 64 to the position shown in FIG. 3, the control cams 50 and 52 are again in the positions shown in FIG. 2, wherein they urge the control shaft 28 and the keyset levers K upwardly against the bias of the springs 58 to thereby restore the ball detents 72 into the detent notches 74, and the motor is deactivated to shut off the machine.

Upon removal of the imprinted form from the bed 14 of the machine, all parts are again in condition for a subsequent printing operation. The keyset levers K which have been set by the stop devices S for repetitive operations need no further attention, and all that is required for another transaction is the resetting of the keyset levers K which have not been set for repetitive operations, replacement of the printing plates C2 and C3 and placement of a new form on the bed 14.

Each of the keyset levers K1–K12 may also be provided with a leg 82 which arrests movement of the keyset levers K at their blank positions against a tie bar 84 mounted in the side plates 46 and 48 as shown in FIGS. 2 and 3.

From the foregoing, it will be appreciated that the present invention provides a novel arrangement for restoring selected keyset levers and their corresponding print wheels, in response to a printing cycle, to a blank position without requiring any machine operator intervention. Any combination of the keyset levers may be positioned for imprinting variable data which are changeable from one printing operation to another, or to positions at which the keyset levers are to remain

constant for imprinting repetitive variable data which are not required to be changed for succeeding printing operations. The feature of withdrawing the ball detents, associated with the keyset levers, from the detent notches prior to return movement of the keyset levers to their blank positions provides a simple, inexpensive and reliable arrangement for reducing the force required to restore the keyset levers and eliminates noise and wear of the parts that would necessarily be present if the friction of the releasable retaining detent means were not alleviated.

What is claimed is:

1. A data recorder for imprinting variable data and repetitive data from a plurality of settable variable data print wheels comprising:

a bed for holding a form to be imprinted;

a platen carriage movable in relation to the bed from a start position to an actuated position to perform a printing operation and back to the start position to complete a printing cycle;

a plurality of rotatably positionable print wheels in the bed located for printing cooperation with the platen carriage;

a positioning means for each print wheel movable along a path to one of a series of positions including a blank position and a plurality of selected printing positions for rotating said print wheel to a desired peripheral setting;

blocking means consisting of a plurality of blocking members, each blocking member associated with a respective positioning means and being selectively movable to a desired position in said path for blocking said positioning means against movement from the selected printing position to the blank position.

reset means responsive to movement of the platen carriage from the actuated position to the start position for applying a drive force to each of the positioning means in a direction urging the positioning means towards the blank position, thereby driving all said positioning means not blocked to the blank position after the platen carriage has reached the start position.

2. A data recorder for imprinting variable data and repetitive data from a plurality of settable variable data print wheels comprising:

a bed for holding a form to be imprinted;

a platen carriage movable in relation to the bed from a start position to an actuated position to perform a printing operation and back to the start position to complete a printing cycle;

a plurality of rotatably positionable print wheels in the bed located for printing cooperation with the platen carriage;

a positioning means for each print wheel movable along a path to one of a series of positions including a blank position and a plurality of selected printing positions for rotating said print wheel to a desired peripheral setting;

blocking means consisting of a plurality of blocking members, each blocking member associaed with a respective positioning means and being selectively movable to a desired position in said path for blocking said positioning means against subsequent movement from the selected printing position to the blank position;

reset means responsive to return movement of the platen carriage from the actuated position to the start position for applying a drive force to each of the positioning means in a direction urging the positioning means towards the blank position,

thereby driving all said positioning means not blocked to the blank position during return movement of the platen carriage from the actuated to the start position.

3. A data recorder as set forth in claim **1** which further includes means for releasably retaining the positioning means in the selected printing position comprising:

releasable retaining means associated with the positioning means;

a shaft for pivotally supporting the positioning means, said shaft being displaceable between a first position in which the releasable retaining means is in a retaining condition and a second position in which the releasable retaining means is in a release condition;

cam means secured on the shaft for maintaining the shaft in the first position during a printing operation;

biasing means for moving the shaft to the second position during return movement of the platen carriage from the actuated to the start position; and

said cam means restoring the shaft to the first position in response to completion of a printing cycle.

4. A data recorder as set forth in claim **1** in which the reset means comprises:

a shaft for pivotally supporting the positioning means;

a reset cam associated with each of the positioning means secured on the shaft for rotation in a path;

a drive pawl pivotally mounted on each of the positioning means movable from a position in the path for engagement by the reset cam to a position out of the path;

biasing means for normally urging the drive pawl into the path; and

means responsive to a printing cycle for rotating the shaft to engage the reset cam with the drive pawl associated with each of the positioning means which has been set for imprinting variable data for moving said positioning means to the blank position, and said reset cam moving the drive pawl associated with each of the other positioning means which has been set for imprinting repetitive data out of the path against the urging of the biasing means.

5. A method of imprinting from print wheels which are selectively settable for imprinted selected variable data in each printing cycle of a cyclically operated data recorder and for imprinting repetitive selected variable data which is not selected and varied in each printing cycle, by moving a platen carriage from a start position across and in engagement with the print wheels to an actuated position to perform a printing operation and return to the start position to complete a printing cycle, comprising:

positioning the print wheels from a blank position to a selected printing position;

placing a form to be imprinted so that it overlies the print wheels;

moving the platen carriage through a printing cycle to imprint the form;

applying a drive force to the print wheels in response to return movement of the platen carriage from the actuated position to the start position;

allowing those print wheels which have been set for imprinting selected variable data to move from the selected printing position to the blank position in response to the drive force; and

blocking those print wheels which have been set for imprinting repetitive selected variable data against return movement to the blank position by the drive force;

whereby all of the print wheels may be moved to selected printing positions and some or all of the print wheels may be blocked against movement from the selected printing position to the blank position for imprinting repetitive selected variable data in a subsequent printing cycle.

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