

April 26, 1960

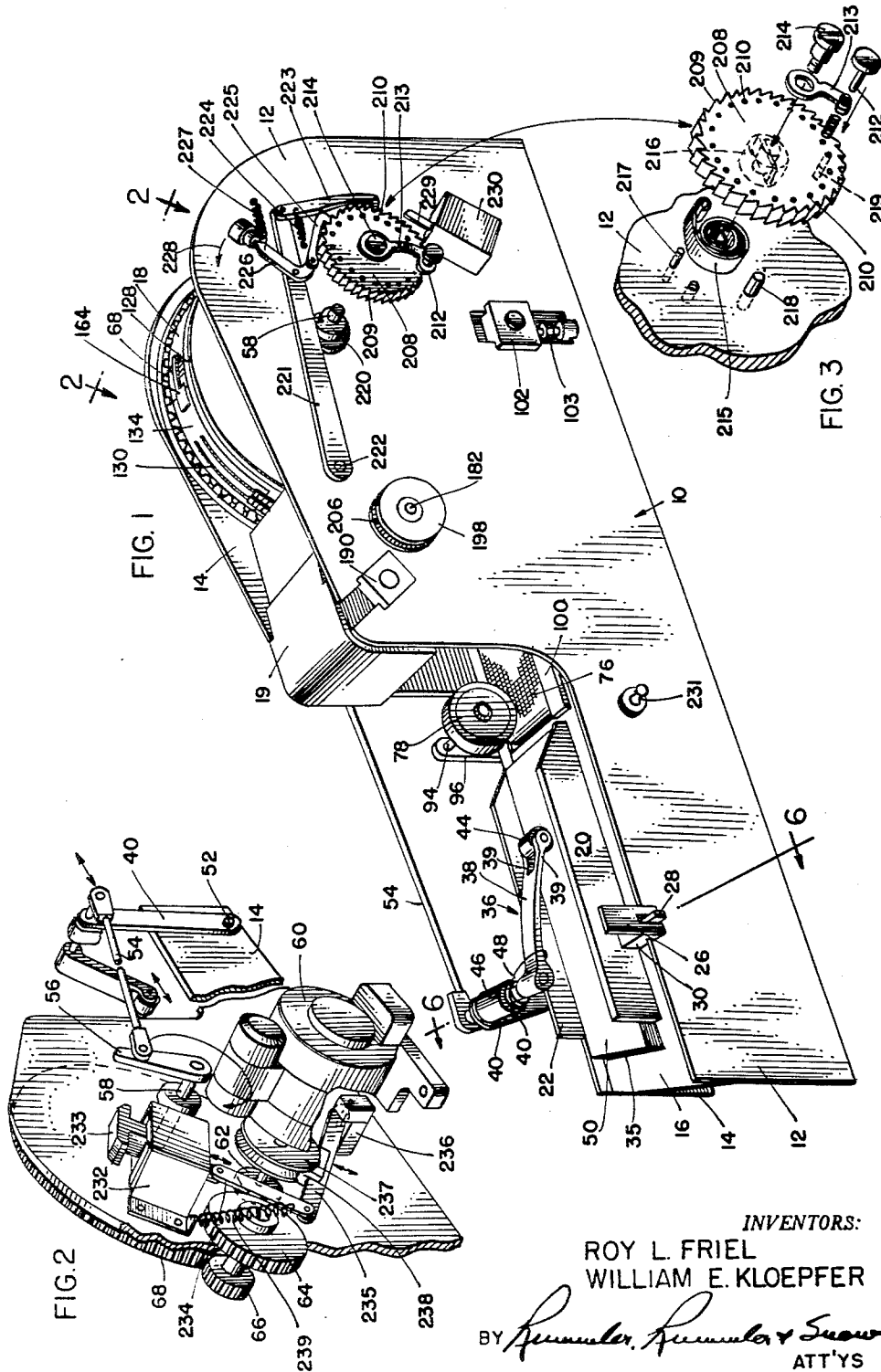
R. L. FRIEL ET AL

2,934,008

PERSONAL-CHECK IMPRINTING MACHINE

Filed Oct. 20, 1955

4 Sheets-Sheet 1



April 26, 1960

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2,934,008

PERSONAL-CHECK IMPRINTING MACHINE

Filed Oct. 20, 1955

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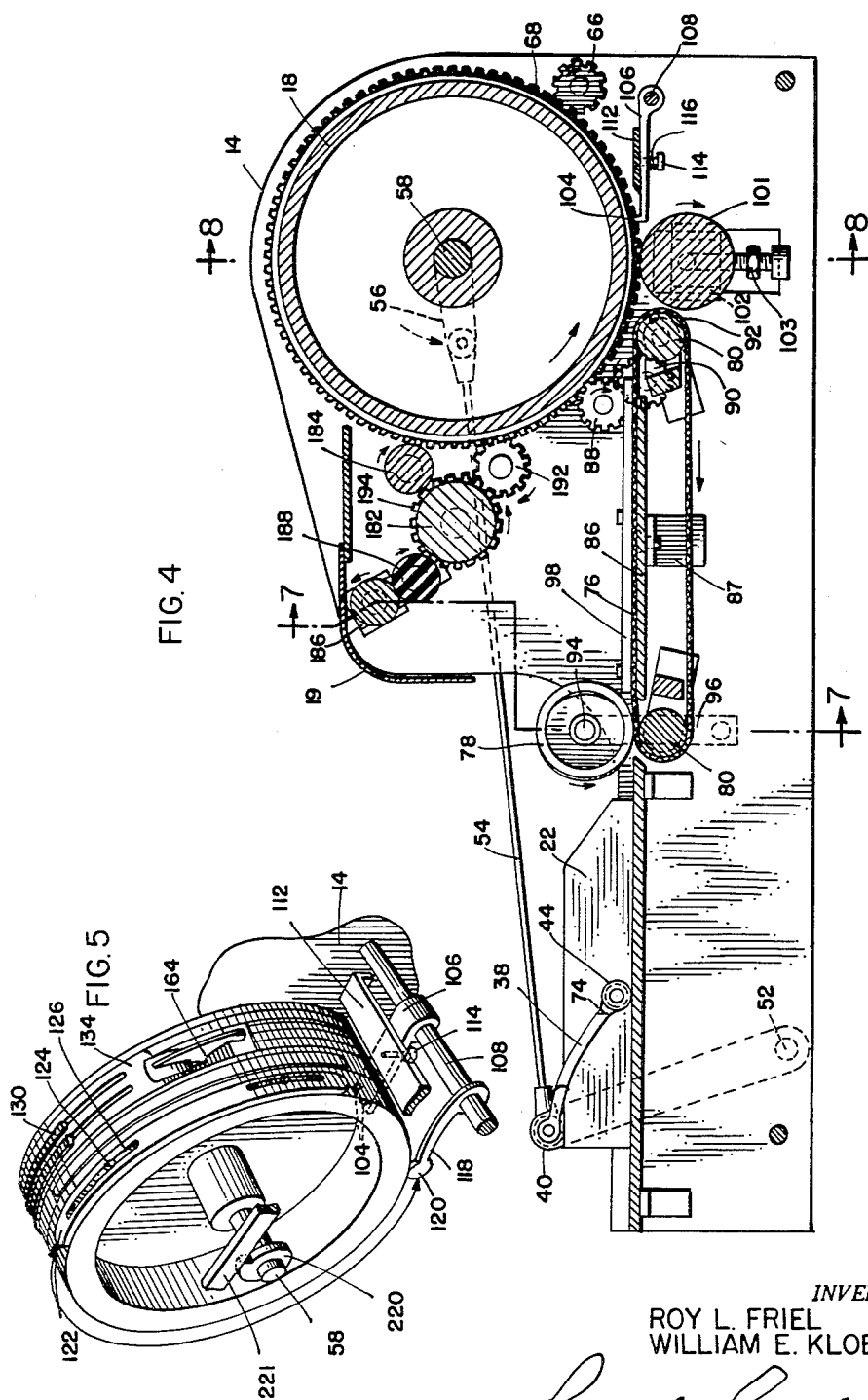


FIG. 5

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PERSONAL-CHECK IMPRINTING MACHINE

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4 Sheets-Sheet 3

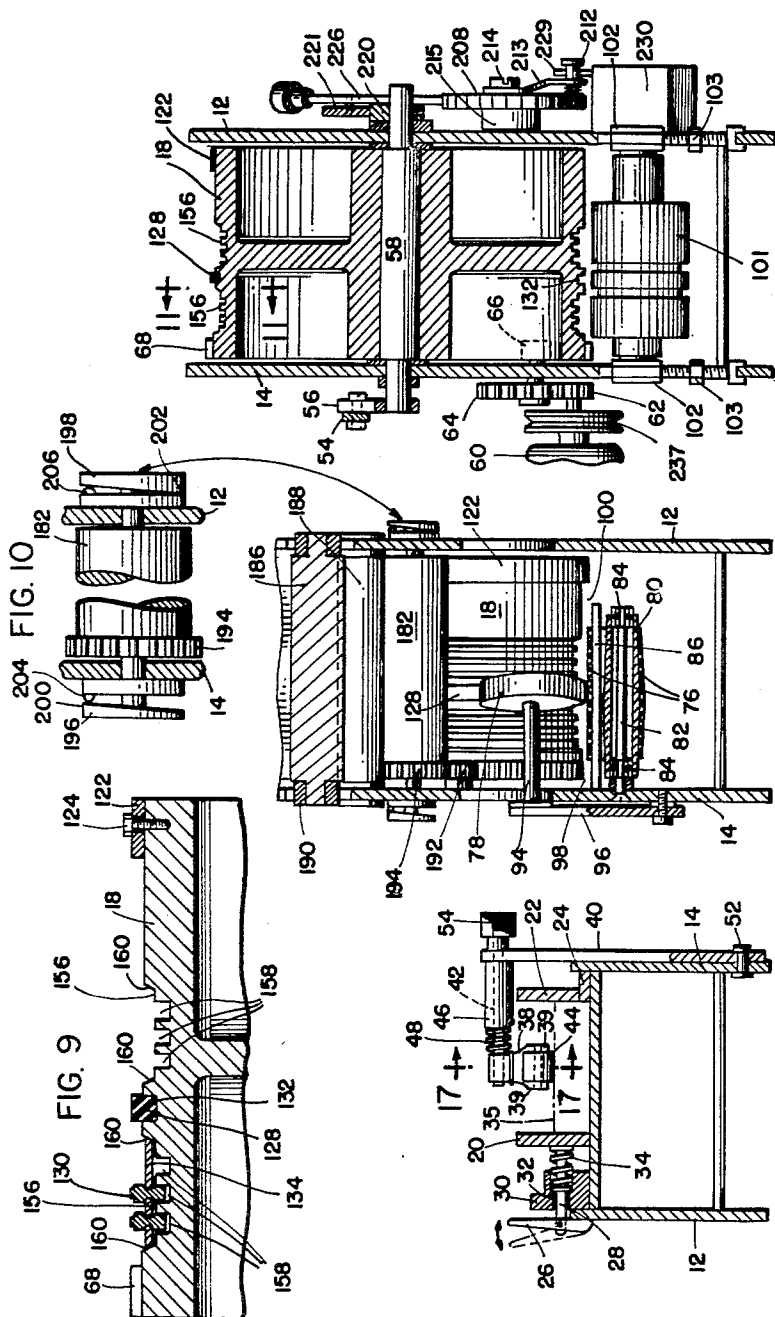


FIG. 8

FIG. 7

FIG. 6

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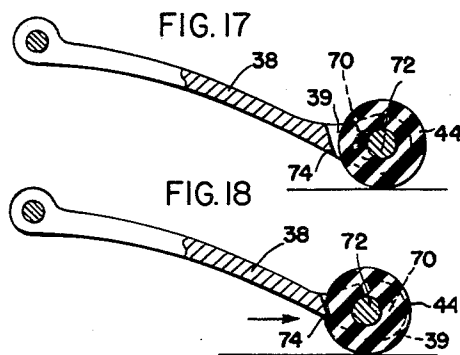
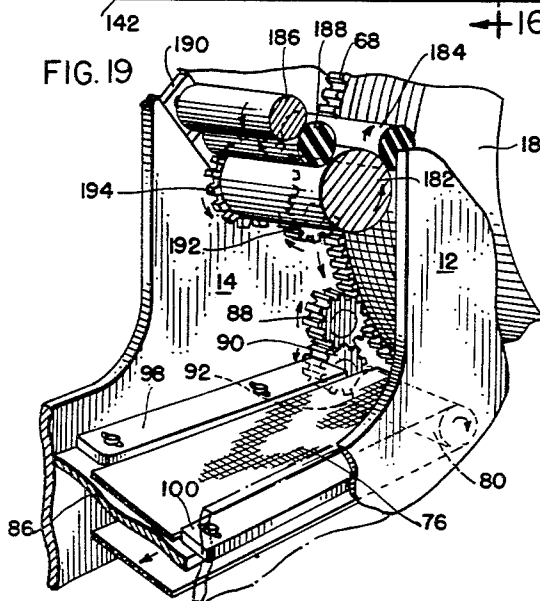
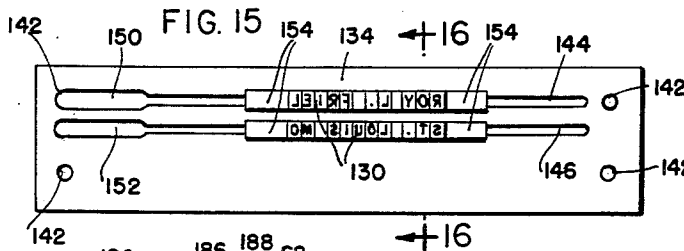
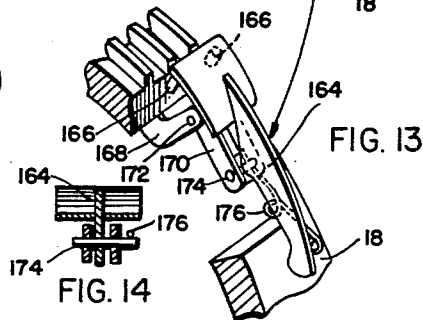
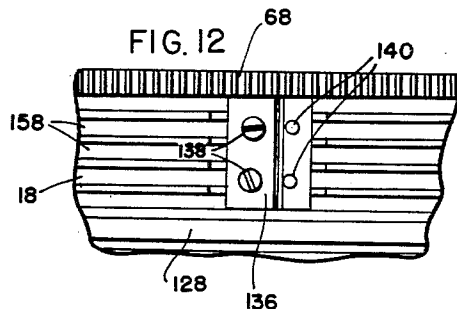
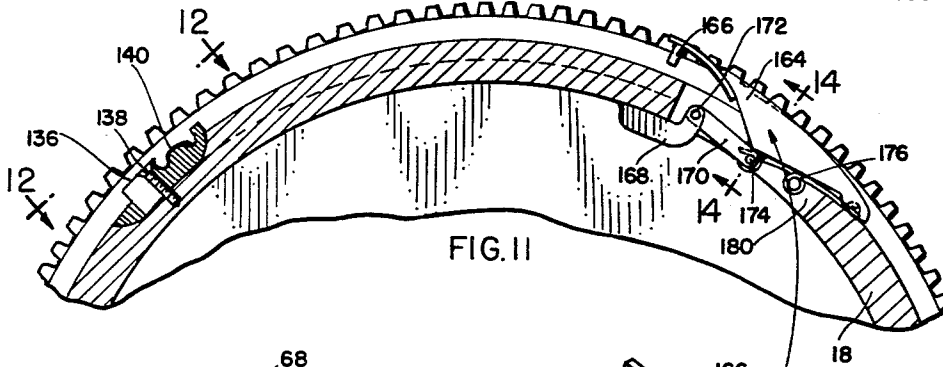
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PERSONAL-CHECK IMPRINTING MACHINE

Filed Oct. 20, 1955

4 Sheets-Sheet 4



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2,934,008

PERSONAL-CHECK IMPRINTING MACHINE

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Application October 20, 1955, Serial No. 541,598

3 Claims. (Cl. 101—232)

This invention relates to a check imprinter and more particularly to a device of the type indicated which is adapted to provide successive feeding of a predetermined number of checks into position for printing in the machine and to provide a uniform ink impression at a predetermined position thereon.

It has been the practice with many banks and other financial institutions to provide personalized checks for their customers as a means of creating goodwill. Usually it has been necessary to send the bank's checks to a private printing concern for printing, and consequently, this service has been costly, particularly in cases where checks are sold in lots of 10 or 20, and has involved considerable delay between the time the checks are requested and delivered.

It is accordingly an object of the present invention to provide an improved check imprinter which can actually be used at the bank itself and, in fact, alongside the teller's window.

Another object is to provide such a check imprinter which is adapted to print a predetermined number of checks at each printing cycle and can thereupon, almost immediately, print the same number of checks again, but with a different personal imprinting, for as many cycles as may be desired.

Another object is to provide improved means for advancing checks continuously into feeding mechanism therefor from a stacking platform at the rate of one check per each revolution of the type cylinder.

Another object is to provide improved means for insuring that the checks will be maintained in proper alignment with the type cylinder of the machine as they are fed into position for printing.

Another object is to provide improved means for holding checks in position for printing until the type cylinder has been rotated into printing relation therewith.

Another object is to provide improved means for maintaining the printing plate in secure and tightly abutting engagement on the type cylinder, and for holding type in the type plate, in uniform alignment when the plate is thus engaged on the cylinder.

Another object of the invention is to provide improved means for operating the doctor roll for distributing ink evenly on the type faces as held on the cylinder so that a uniform imprint is achieved.

Other objects are to provide improved means for maintaining the check imprinter in readiness for operation between printing cycles and for initiating a successive printing cycle with a minimum of effort; to provide feeding and inking mechanism which can be controlled through the type cylinder of the imprinter by extremely simple means so that all operations will be accurately synchronized; to provide a check imprinter whose sequence of operation may be performed within a very compact space with resulting economies in construction and efficiencies in operation; and to provide a check imprinter which can operate through a desired number of cycles

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of check printing without the necessity of replenishing the supply of checks at each cycle.

Other objects and advantages of the invention will become apparent as the description proceeds in accordance with the drawings showing a specific embodiment of the invention and in which:

Fig. 1 is a perspective view of a check imprinter according to the present invention;

Fig. 2 is a sectional fragmentary perspective view of the actuating and braking means of the invention taken along the line 2—2 of Fig. 1;

Fig. 3 is a fragmentary exploded view of indexing and recycling means for the imprinter adapted to cooperate with the actuating and braking means shown in Fig. 2;

Fig. 4 is a vertical sectional view of the check imprinter shown in Fig. 1;

Fig. 5 is a perspective view of the type cylinder for the imprinter and means associated therewith for synchronizing, feeding and printing of the checks;

Fig. 6 is a vertical sectional view of check stacking and check advancing means according to the invention taken along the line 6—6 of Fig. 1;

Fig. 7 is a sectional view of means for feeding checks to the printing cylinder taken along line 7—7 of Fig. 4;

Fig. 8 is a vertical sectional view of means for moving the checks into position and alignment for printing contact with the type carrier on the printing cylinder, taken along the line 8—8 of Fig. 4;

Fig. 9 is a fragmentary vertical sectional view of a portion of the printing cylinder and the timing and printing means associated therewith;

Fig. 10 is a fragmentary view of the ink storage roller for the imprinter and can means associated therewith;

Fig. 11 is a vertical sectional view of a fragmentary portion of the printing cylinder and fastening means for the printing plate, as taken along the line 11—11 of Fig. 8;

Fig. 12 is a fragmentary plan view of the printing cylinder taken along the line 12—12 of Fig. 11;

Fig. 13 is an enlarged perspective view of the printing plate fastening means disclosed in Fig. 11;

Fig. 14 is a vertical sectional view taken through the line 14 of Fig. 11 showing further details of the said fastening means;

Fig. 15 is a plan view of a printing plate adapted for use with the imprinter of the invention showing type retained therein;

Fig. 16 is a vertical sectional view of the same taken along the line 16—16 of Fig. 15;

Fig. 17 is a vertical sectional view of the check advancing means according to the invention as taken along the line 17—17 of Fig. 6;

Fig. 18 is a further view of the check advancing means, corresponding to the view of Fig. 17; and

Fig. 19 is a perspective view of inking means assembly and check feeding means drive, according to the invention.

Referring now to Fig. 1, the check imprinter 10 of the invention includes vertical frame members 12 and 14, a stacking platform 16 secured therebetween, and a type carrier or printing cylinder 18 journaled in the frame members 12 and 14. Cover elements 19 may be secured between the frame members adjacent the type cylinder 18, and as shown more particularly in Fig. 6, vertical guide members 20 and 22 are mounted on the platform 16, guide member 22 being fixedly secured thereto by means of flange 24 and guide member 20 being laterally adjustable by means of a lever 26. Lever 26 is pivotally secured to a crossbar 28 which is slidably mounted in a bracket 30 secured to the frame member 12 and having an internal shoulder 32, the shaft 28 being provided with

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a spring 34 adapted to bias the guide member 20 in abutting relation with a stack of checks 35 which may be positioned on the stacking platform 16. Guide member 20 can thus be cammed away from the checks 35 when the lever 26 is moved to the position shown in dot and dash outline in Fig. 6, in order to permit replacement of checks for printing.

A reciprocating pawl member, generally referred to by reference numeral 36, is provided according to the invention to feed checks one at a time from the stack 35, and comprises a rocker arm 38 which is journaled in an arm 40, by means of a transversely extending journal bar 42, a roller 44 which is preferably of rubber or similar material having high frictional characteristic, a sleeve 46 secured to arm 40, and a spring 48 engaged in the said sleeve and adapted to bias the arm 38 and roller 44 downwardly into engagement with the stack of checks 35. The arm 40 is pivotally secured in the frame member 14 by means of a suitable bolt 52 and journal bar 42 has secured to its outer extremity a drive shaft 54 which is in turn pivoted to a crankarm 56 secured to an axle 58 of type cylinder 18 as seen most clearly in Fig. 2.

An electric motor 60 is provided which is adapted to rotate the type cylinder 18 by means of a pinion 62, a gear 64 and a pinion 66 axially secured thereto in meshing engagement with a peripheral gear 68 on the type cylinder 18. Accordingly, when the type cylinder 18 is rotated, shaft 54 is reciprocated substantially horizontally to drive the roller 44 back and forth in the channel formed by the guide members 20 and 22.

Referring now to Figs. 17 and 18, the lower portion of the arm 38 is bifurcated to provide a pair of laterally spaced fingers, 39, each of which is provided with an elongated aperture 70 wherein is journaled an axle 72 carrying the roller 44 in the space between the fingers 39. The vertical dimension of the aperture 70 is preferably substantially the same as the diameter of the axle or shaft 72, but the horizontal dimension or axis thereof is substantially longer than the diameter of shaft 72, for example, by as much as the radius of the shaft.

Arm 38, in the bight between the fingers 39, is provided with a downwardly-extending claw or prong 74 so directed that when the arm 38 is moved forwardly as shown in Fig. 18, the axis of the roller 44 will shift rearwardly in the finger apertures 70 and the prong 74 will engage the cylindrical surface of the roller to prevent rotation thereof and to cause it to frictionally drag the uppermost check in the stack 35 and thereby advance the check onto a conveyor belt 76, shown in Fig. 1, and beneath an idle roller 78 whose function will be further described hereinafter.

When the reciprocating arm 38 is moved in the reverse direction, as shown in Fig. 17, the shaft 72 of the roller 44 moves to the forward ends of the apertures 70 and the claw or prong 74 is disengaged from the roller which is then free to rotate across the top surface of the stack of checks 35 without disturbing the alignment of the stack, particularly since the channel members 20 and 22 hold the checks with an amount of force just sufficient to prevent accidental movement during this reverse free rolling motion of the roller but to permit advancement of the check as described during the forward motion of the roller. Accordingly, with each rotation of the type cylinder 18 an individual check will be fed to the conveyor belt 76.

Referring now to Figs. 4 and 7, the conveyor belt 76 is mounted at each end upon a double cone roller 80 journaled on an arm 82 by means of suitable bearings 84, the arm 82 being secured in the frame member 14. A guide plate 86 is also secured by means of a bracket 87 to the wall 14 immediately beneath the upper rim of the belt 76 and extends partially across the channel formed by the plates 12 and 14 so that the belt 76 may be easily slipped on and off the rollers 80 from the free ends thereof. The belt may be of any type, such as the usual

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woven type or of a suitable plastic material for ready replacement, and as shown in Fig. 19, it is driven by means of a pinion 88 journaled in the wall 14 and meshed between the gear 68 on the type cylinder and an idler pinion 90 which in turn engages a gear 92 on the shaft of the forward roller 80 so that the uppermost surface of the belt will be moving in the same direction as the adjacent cylinder surface.

The idler roller 78 is preferably formed of rubber at least on the circumference thereof, and is journaled on a bar 94 which is secured to the wall 14, preferably by means of a bracket member 96, and is angled forwardly in the horizontal plane toward the type cylinder 18 by a relatively small angle from the perpendicular to the frame wall 14 so that checks entering upon the belt 76 will be urged by the roller 78 against a guide flange 98 as they are carried by the belt and will not move out of parallel alignment with the longitudinal axis of the belt travel. A guide plate 100 may also be provided at the other side of the belt.

As shown in Fig. 4 checks will be moved by the conveyor belt 76 into engagement between the type cylinder 18 and an impression roller 101, journaled between the side plates 12 and 14, the axis of the impression roller being preferably in vertical alignment with the axis of the type cylinder 18. As shown in Figs. 1, 4 and 8, the roller 101 is journaled in vertically adjustable slide blocks 102 which, in turn, are adjusted by means of positioning screws 103.

Further forward movement of the checks between the cylinder 18 and the roller 101 is normally prevented for a predetermined extent of revolution of the type cylinder 18 by means of automatic stop fingers 104 which comprise upwardly projecting tips on one or more rocker arms 106 fast on a shaft 108 which, as shown in Fig. 5, is journaled in walls 12 and 14. A transverse bracket 112 is secured to the wall 14, above the arm 106, and has mounted therein a headed stud 114 which projects through a suitable aperture in the arm 106 and carries a helical spring 116 disposed to bias the shaft 108 and finger arms 106 upwardly against the bracket 112. The stop fingers 104 are thus normally held in the path of the checks as they are driven by the belt 76, between the said cylinder 18 and roller 101 as described. The shaft 108, however, has fixedly secured thereto the rocker arm 118 having a rounded contact portion 120 at its outer end which is adapted to be engaged by a cam 122 extending peripherally on the type cylinder 18 for a predetermined distance (see Fig. 5). The cam 122 may be adjusted angularly by means of studs 124 and slots 126 therein, and when the cam 122 moves the rocker arm 118 downwardly, upon contact with the end 120 at a predetermined position of revolution of the type cylinder 18, the fingers 104 will be depressed to release the check for further movement into properly aligned position beneath the printing type on the cylinder 18.

In order to effect such further movement required to place the check in proper position for printing after release by the stop fingers, the type cylinder 18 has secured thereon in circumferentially extending relationship a peripheral rib 128 of rubber or other material having a high frictional characteristic, as best seen in Figs. 8 and 9. The leading end of the rib 128 is displaced behind the leading end of the cam 122 a predetermined distance so that it will engage a check disposed between the cylinder 18 and roller 101 only when the detents 104 are depressed by the cam 122 and the check is fully released for forward travel. Thereupon, the rib 128 will engage and move the check forward a predetermined distance to bring it into printing registry with type 130, which is accurately positioned on the type cylinder 18 a predetermined distance behind the leading end of the rib 128, as will be hereinafter described, so that the impression will be made at a desired position on the check. Preferably the rib 128 is secured in a circumferential groove

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132 in the cylinder 18, by gluing or other suitable means, and it will be appreciated that the extent to which the leading edge of cam 122 is in advance of the leading edge of the rib 128 may be adjusted by means of the cam studs 124 and slots 126, while the relative positions of the type 130 and the rib 128 may be adjusted by means hereinafter described.

The printing plate 134 for the type extends circumferentially on either side of the type itself in order that it may be secured against the cylinder by suitable fastening means. Referring to Figs. 11 and 12, it will be seen that a fastening block 136 is provided which is secured against the cylinder by means of bolts 138 and provided with one or more upstanding pin elements 140. As seen in Fig. 15, the plate 134, which is formed of a suitably flexible fiber, is provided with end apertures 142, adapted to be engaged by the pins 140, and narrow elongated slots 144 and 146, the slot 144 providing one of the apertures in the example shown. As seen in Fig. 16, the type 130 is retained in the slots 144 and 146 by means of a suitable I-shaped configuration of the type elements which permits it to be inserted at the relatively enlarged end portions 150 and 152 of the slots and thereupon moved axially into proper position in the narrow portions of the slots, stop elements 154 being preferably disposed at each end of each line of type.

As best seen in Fig. 9, the cylinder is formed with one or more circumferential channels 156 of a depth substantially equal to the thickness of the plate 134 and each having a plurality of circumferentially extending grooves 158 in its bed adapted to receive the base portions of the type elements. As shown, each of the channels 156 is of a width slightly larger than the width of the type plates 134 and the channel side walls are slanted inwardly so as to engage the sides of the plate 134 with a squeezing action. Thus when the plate 134 is backed onto the pins 140 at one end and laid along the channel 156, it may be drawn into tightly abutting relation with the bed of the channel by means of a suitable toggle clamp, thereby compressing the sides of the plate on the slanted channel walls and closing the slots 144 and 146 of the plate against the type elements therein to securely hold the same against inadvertent displacement.

The toggle clamp, as shown in Figs. 11 and 13, comprises a pivot arm 164 having one or more pins 166 depending from the forward end thereof, which are adapted to engage the rearward apertures 142 in the plate 134, a bracket member 168 secured to the underside of the cylinder drum 18, a snap arm 170 having one end pivotally mounted at 172 on the side bracket and the other end pivotally secured by a cross pin 174 to the said arm 164, and a spring 176 secured to the said cylinder at one end and arranged to bias the swing arm 170 inwardly and thereby urge the pivot arm 164 downwardly into locking position against the cylinder 18, within an opening 180 formed therein, as seen in Fig. 11. When the arm 164 is thus pressed into locking position, the pins 166 will move rearwardly relative to the block 138 and thereby draw the relatively flexible plate 134 snugly into the channel 156, and the type 130 will thereupon be clamped and positioned for a rotary printing operation.

The uniform setting of the type faces permits the formation of a very even ink coating thereon, which is provided by means of the structure shown in Figs. 4, 10 and 19, wherein a storage roll 182 of steel or other suitable metal is journaled somewhat loosely in the frame members 12 and 14 in tangential relation with a rubber form roll 184. A metal distributor roll 186 and a rubber distributor roll 188 are journaled in an adjustable bracket 190 in tangential relation, roll 188 being in tangential alignment with the storage roll, and when the cylinder 18 is turned the rolls are also turned by means of a pinion 192 in meshing engagement with gear 68 on the printing cylinder and gear 194 on the storage roll, as seen in Figs. 4 and 19.

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The storage roll 182 has fixedly secured to either end thereof, externally of the frames 12 and 14, cams 196 and 198 whose inner faces are disposed at a slight angle from a plane perpendicular to the axis of the storage roll 182, the innermost portion 200 of the cam 196 being set 180° from the innermost portion 202 of the cam 198. At the same time a pair of projections 204 and 206 are mounted on frames 12 and 14 adjacent the periphery of the cams 196 and 198 and are adapted to be maintained in continuous contact with the inner faces of the cams while the storage roll 182 is rotating. Accordingly, the storage roll will be oscillated or jogged axially during rotation thereof as above described to distribute ink to the form roll 184 in a uniform manner regardless of unevenness in the ink distribution imparted to the storage roll by the distributor rolls 186 and 188, so as to provide the required uniform ink coating on the type cylinder.

Referring now to Fig. 1, it will be seen that an indexing or operation control wheel 208, having ratchet teeth 209, is journaled in the frame member 12 and has formed marginally therein spaced aperture 210, corresponding in number to the number of teeth 209, for receiving an indexing pin 212 carried by an arm 213 which is pivotally secured axially of the wheel 208, as by a bolt 214. The purpose of the indexing wheel 208 is to count and regulate the number of printing impressions that are desired to be made, or, in other words, the number of printed checks to be issued by the machine in the course of its operation. Thus, as seen in Fig. 3, the indexing wheel 208 is normally biased in a clockwise direction by means of a clock spring 215 mounted on the hub 216 of the wheel 208 and having its outer end secured to the frame member 12 as by a stud or pin 217. The initial or zero position of the indexing wheel is determined by a stop pin 218, projecting outwardly from the frame member 12 and positioned to engage a coacting stop element 219 projecting from the inner side of the wheel 208, and in operation the wheel 208 is turned counterclockwise, against the action of the spring 215, in step-by-step angular increments, one for each revolution of the printing cylinder 18, by means of a pawl and detent arrangement which will now be described.

As shown in Figs. 1 and 8, the main shaft 58 of the printing cylinders 18 is provided with a cam 220, on the end projecting from the frame adjacent the indexing wheel 208, which cam engages an overlying rocker arm 221 pivotally mounted on the frame member 12 as at 222. This rocker arm extends beyond the cam 220, above and beyond the indexing wheel 208, and carries a downwardly directed pawl 223 pivotally attached at its free end and adapted to engage the ratchet toothed periphery 209 of the indexing wheel in such a manner as to pull the said wheel in the counterclockwise direction whenever the rocker arm 221 is lifted. The pawl 223 is normally held in operative engagement with the wheel 208 by means of a spring 224 connected between the pawl and the frame member 12. The wheel 208 is held in the position set by the pawl 223 by means of a detent 225, pivotally connected on the lower end of an operating lever 226 and overhanging the wheel 208 in the same vertical plane as the pawl 223, the detent resting gravitationally on the toothed periphery of the wheel. The operating lever 226 is, in turn, pivotally mounted on the rocker arm 221 and is tensioned to hold the detent 225, against the force of the clock spring 215, by a spring 227 connected between the frame 12 and the lever 226.

The function of the operating lever 226 is to release the pawl and detent from engagement with the indexing wheel 208, so that the clock spring 215 can return the wheel clockwise to its zero or initial position, and this is done by lifting or swinging the operating lever to the left or in the counterclockwise direction, as indicated by the arrow 228, so that the detent 225 will be shifted to the right to disengage its tooth from the wheel 208

and simultaneously engage and push outwardly the pawl 223 thereby fully releasing the wheel.

As shown in Figs. 1 and 8, the indexing pin 212, which is engaged in the holes 210 of the wheel 208 and thus swings or turns therewith, is provided with an enlarged head for convenient manipulation and extends outwardly from the arm 213 sufficiently to engage the actuating element 229 of a normally closed micro switch 230 which, in turn, is connected in series with the motor 60 which drives the machine. The micro switch 230 shuts off the motor 60, when engaged by the indexing pin 212 and thus automatically stops the machine. A main switch 231 is also provided in the circuit to the micro switch to permit primary or initial adjustment of the indexing pin with the machine stopped.

In the operation of the indexing mechanism to regulate the operation of the machine, and with the main switch 231 in "off" position, the indexing wheel is first released to its initial or zero position by lifting the operating lever 226. Then the indexing pin 212, on its arm 213, is shifted clockwise to the hole 210 corresponding to the number of checks to be imprinted. This releases the actuating element of the micro switch, closing the same, and the machine is ready to be started by means of the main switch 231. As the printing cylinder 18 is rotated by the motor 60 the cam 220 turns to lift the rocker arm 221, once for each full revolution, which, in turn, lifts the pawl 223 to turn the indexing wheel 208 an angular distance counterclockwise, equal to one tooth space where it is held by the detent 225. The indexing pin is thus shifted step-by-step toward the micro switch 230, until the desired number of imprinted checks has been delivered, and when the indexing pin engages the micro switch the machine is automatically stopped.

If it is desired to repeat a run of the same number of checks, the main switch need not be operated and it is only necessary to swing the operating lever 226 to release the index wheel to its start position, which action closes the micro switch and automatically starts the driving motor 60.

In many cases it is desired to change the imprinting plate after each cycle or run of the machine, as when successive customers purchase personalized checks for which the banking service is prepaid, and it is therefore important that, when the machine stops after a run of a number of checks, the printing cylinder 18 will be in a position where the printing plate is exposed for convenient access and change. In order to accomplish this an automatic braking means is provided, which is synchronized with the micro switch, so as to stop the cylinder 18 with the printing plate exposed at the top of the machine when a run of checks has been completed.

Such a braking means is illustrated in Fig. 2 and as shown comprises a solenoid 232, mounted on the side frame 14, above the motor 60, and having its movable core 233 connected by a link 234 to the free end of a lever 235 which is pivoted at its other end on a mounting block 236 secured to the frame 14. The lever 235 extends transversely below a brake wheel 237, mounted on the drive shaft of the motor 60, and carries a brake shoe 238 adapted to engage the periphery of the brake wheel. The outer or free end of the lever 235 is connected to the machine frame by means of a spring 239 which normally applies a lifting force on the lever and thus holds the brake shoe 238 in tight braking engagement with the brake wheel.

The solenoid 232 is connected in series between the micro switch 230 and the motor 60. Thus, when the machine is in operation the solenoid core 233 is pulled inwardly, depressing the brake lever 235 against the spring 239, and disengaging the brake shoe from the brake wheel 237. When, however, the micro switch is operated by the indexing pin 212, as when a predetermined run of checks has been completed, the circuit to the solenoid and the drive motor is opened and the

brake shoe is immediately forced into engagement with the brake wheel by the spring 239. This stops rotation of the cylinder 18 almost immediately and when the indexing wheel is properly synchronized, as by adjusting the angular position of the cam 220, relative to the position of the type plate on the cylinder 18, the type plate will always come to rest at an exposed position at the top of the machine where it can be readily changed.

In operation of the machine, a plurality of checks 35 are placed on the stacking platform 16 by adjustment of the lever 26 and the machine is started by moving the control switch 231 to its "on" position. Where the indexing pin 212 has been previously disposed in an initial indexing position, i.e., with the arm 213 out of contact with the micro switch 230, the circuit will be closed and rotation of the type cylinder 18 will reciprocate the roller member 36 to advance the checks one by one onto the conveyor belt 76. As the checks are thus advanced, the idler wheel 78 will align them axially with the belt in cooperation with the channel guide 98 so that upon entering between the type cylinder 18 and impression cylinder 102 the stop fingers 104 will hold each check in precise alignment with the type plate and in readiness for the printing operation. Thereupon, cam member 122 will engage and depress the stop fingers to release the check and the friction rib 128 will then grip the check and to move it forwardly at the same speed as the periphery of the printing cylinder, the timing of release and forward movement of the check being such that the impression of the printing plate 134 will be made at a predetermined location on the check face. This operation will repeat for each revolution of the printing cylinder and for each check to be imprinted. When the desired number of checks have been imprinted, the index pin 212 will contact the micro switch 230 to open the circuit and the solenoid 232 will be deenergized to permit the brake arm 235 to operate and stop the rotation of type cylinder 18 after a predetermined fraction of a revolution so that it will be in its original starting position. Thereupon, the type plate 134 may be removed and replaced with another of different indicia and the cycle of imprinting operations repeated. Release of the indexing wheel and movement thereof to its initial or zero position to start another cycle of imprinting operations may be delayed while the stack of checks 35 is being replenished, but it will be appreciated that a number of printing cycles may be effected without necessitating this step.

There has thus been provided a check imprinter which can meter a given number of checks to a type cylinder for accurate individual registration, with the type disposed thereon and which can recycle the same or any desired number of checks through the machine without necessity of complicated adjustments. The checks imprinted by means of the machine of the invention will be uniform, both in the spacing of the type impressions and the quality thereof, and the machine can be used by an unskilled operator to produce personalized checks of high quality almost immediately upon request of a customer, it being only necessary for the operator to select the particular customer's prepared type plate from a file thereof, secure the plate on the type cylinder, set the index wheel, and start the machine.

Although but one specific embodiment of our invention has been herein shown and described, it will be understood that numerous details may be altered or omitted without departing from the spirit of this invention as defined by the following claims.

We claim:

1. A check imprinter comprising a rotatable type cylinder and frame therefor, an electric motor for rotating said cylinder, and indexing means for successively effecting a predetermined number of revolutions of said type cylinder comprising a spring actuated ratchet wheel, a rocker arm pivotally secured to said frame, a pair of pawls pivotally secured to said rocker arm and lying in

a common plane, each of said pawls being adapted to engage the teeth of said ratchet wheel, a cam rotatable with said type cylinder and adapted to oscillate said rocker arm whereby said ratchet wheel is advanced a notch thereof by one of said pawls upon each revolution of said type cylinder, the other of said pawls resting gravitationally on the ratchet wheel to hold it in the advanced position a normally closed microswitch in series with said motor, and angularly adjustable means on said ratchet wheel for contacting said microswitch and opening the same when said ratchet wheel has been advanced a predetermined number of notches, said ratchet wheel being spring actuated to return to an initial indexing position upon manual release of said pawls from engagement therewith whereby to return said microswitch automatically to circuit closing position, and manually operable means for releasing said pawls simultaneously.

2. The construction according to claim 1 including a braking means comprising an arm member pivotally secured to said frame a solenoid in series with said microswitch and connected to one end of said arm, a brake drum secured to the shaft of said motor in the plane of said arm, a brake member on said arm for engaging said brake drum, and spring means adapted to bias said arm toward said drum and urge said brake member into frictional engagement with said brake drum under predetermined pressure when said solenoid is de-energized, said solenoid normally holding said arm away from said drum when energized by the closing of said microswitch.

3. In a check imprinter, a rotary printing cylinder and means for rotating said cylinder, a printing plate having movable type retained thereby, a cam and a driving rib on said cylinder each extending circumferentially thereof for a predetermined angular distance, the leading edge of said cam being spaced a predetermined angular distance in advance of the leading end of said rib and the leading end of said rib being spaced a predetermined angular distance in advance of the leading end of the type retained by said printing plate, said cam and rib being independ-

ently adjustable angularly on said cylinder, an impression roller adjacent and axially parallel with said printing cylinder and in predetermined minimum peripherally spaced relation therewith, and a movable stop finger, said stop finger being normally positioned in the path of a check delivered between said printing cylinder and said impression roller and movable out of said path by said cam, and said rib being adapted to engage a check disposed between said impression roller and said printing cylinder upon movement of said stop finger out of the path of the check and to drive said check into predetermined position for printing engagement between said printing plate and said impression roller, said impression roller being mounted to yield under pressure in the direction radially away from said printing cylinder.

References Cited in the file of this patent

UNITED STATES PATENTS

393,517	Patterson et al.	Nov. 27, 1888
1,183,529	Brasseur	May 16, 1916
1,627,483	Claybourn	May 3, 1927
1,658,140	Osborne	Feb. 7, 1928
1,683,840	Morse	Sept. 11, 1928
1,712,247	Brasseur	May 7, 1929
1,919,051	Bauer	July 18, 1933
2,041,943	McCain	May 26, 1936
2,246,508	Davidson	June 24, 1941
2,387,311	Wender	Oct. 23, 1945
2,464,173	Broadmeyer	Mar. 8, 1949
2,588,917	Geib	Mar. 11, 1952
2,588,946	Walden et al.	Mar. 11, 1952
2,608,408	Gibson	Aug. 26, 1952
2,629,322	Levin	Feb. 24, 1953
2,643,607	Levin et al.	June 30, 1953
2,693,357	Davidson	Nov. 2, 1954
2,775,196	Miles	Dec. 25, 1956
2,812,047	Smitzer	Nov. 5, 1957