Oct. 11, 1938. E. W. DAVIS ET AL 2,132,403

IDENTIFICATION AND RECORDING DEVICE

Original Filed March 6, 1935 4 Sheets-Sheet 1

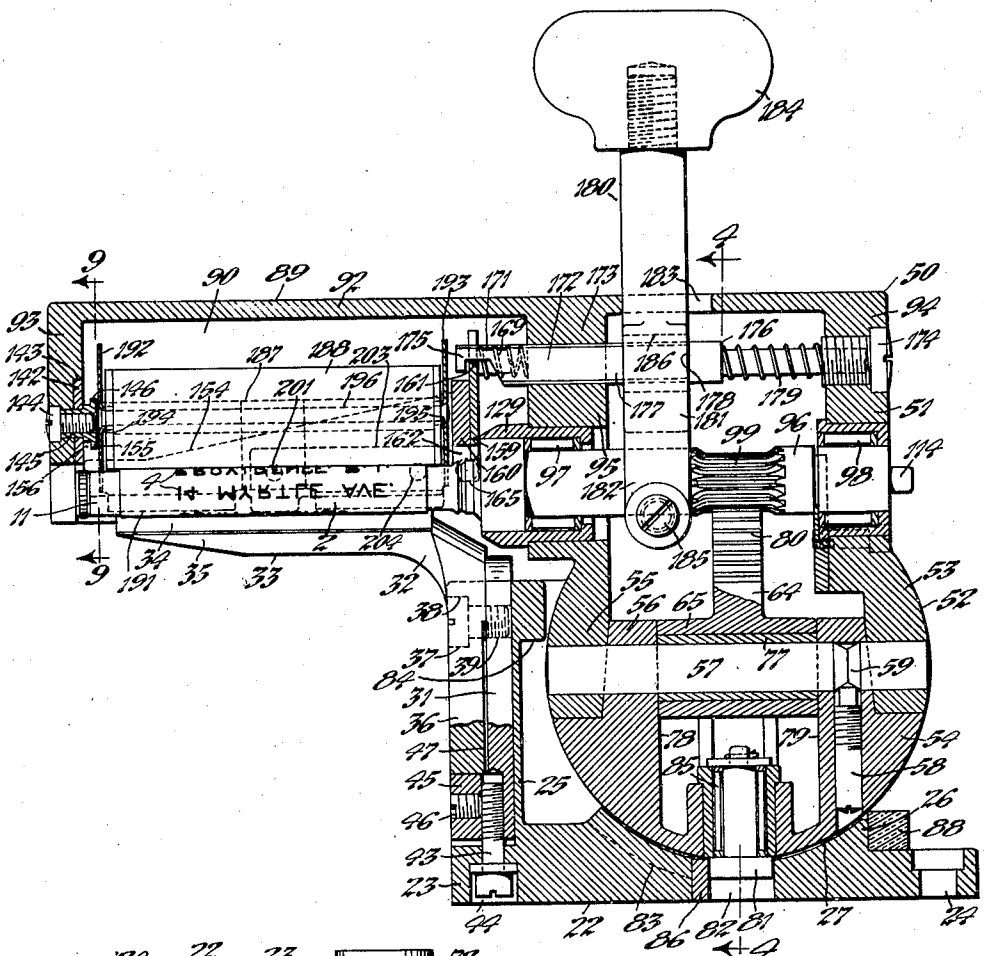


Fig. 1.

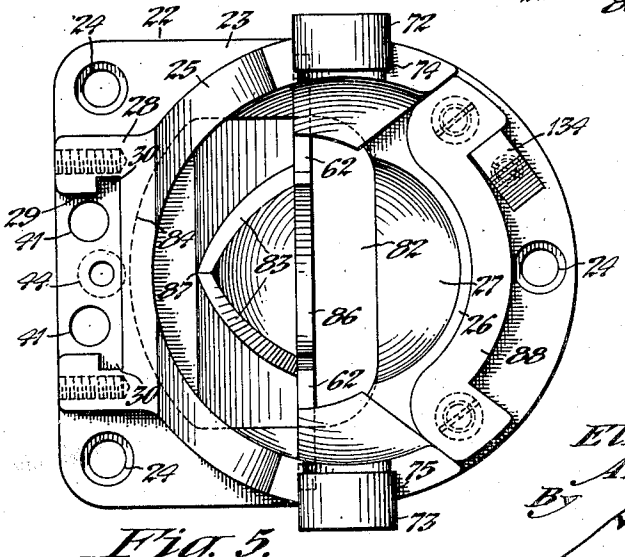


Fig. 5.

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Fig. 11.

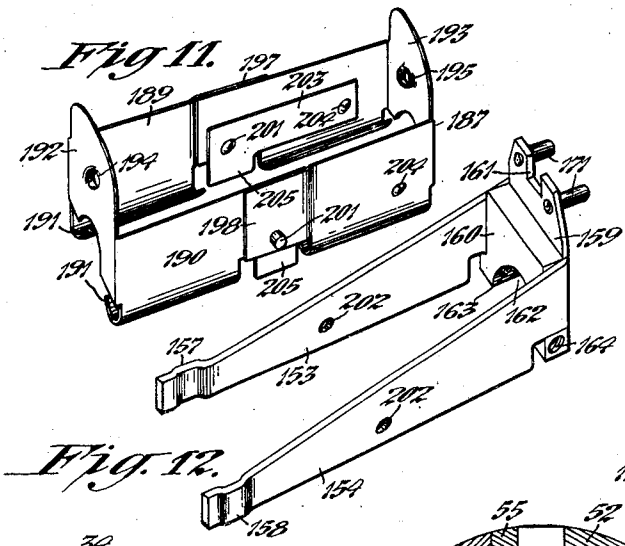
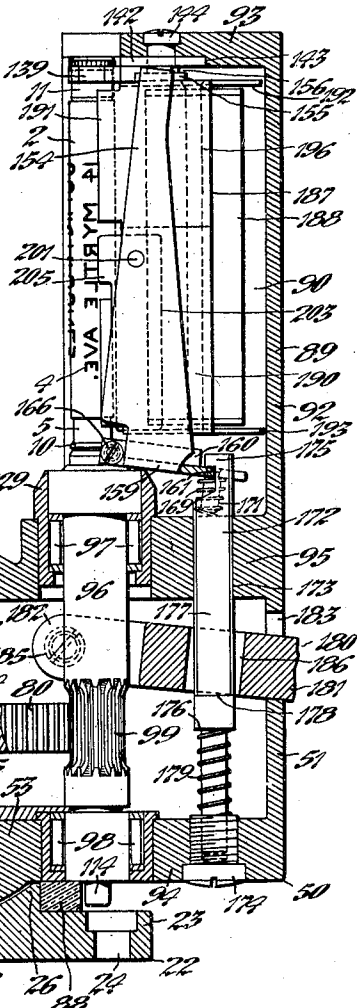


Fig. 12.



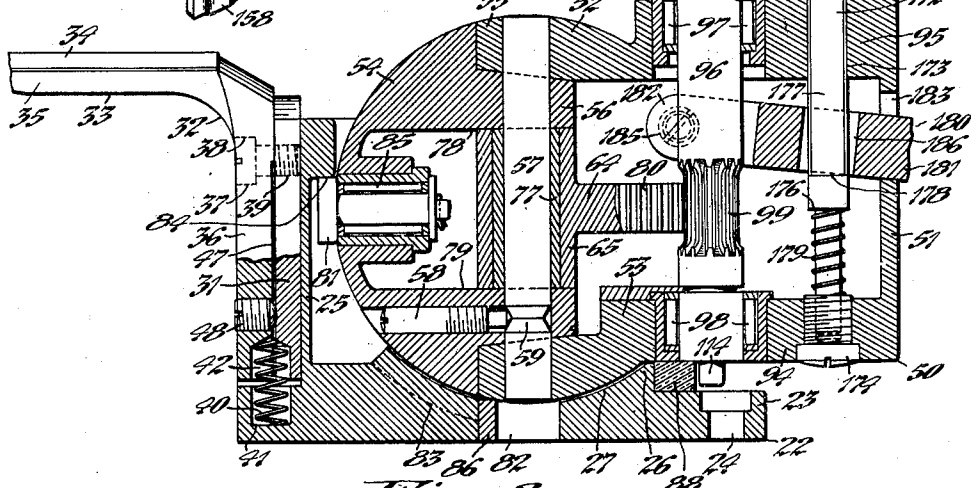


Fig. 2.

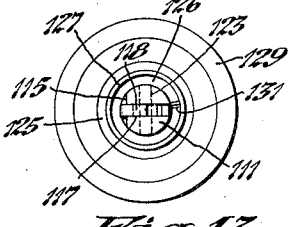


Fig. 13.

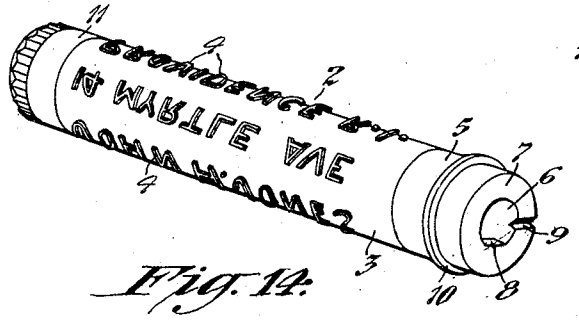


Fig. 14.

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IDENTIFICATION AND RECORDING DEVICE

Original Filed March 6, 1935 4 Sheets-Sheet 3

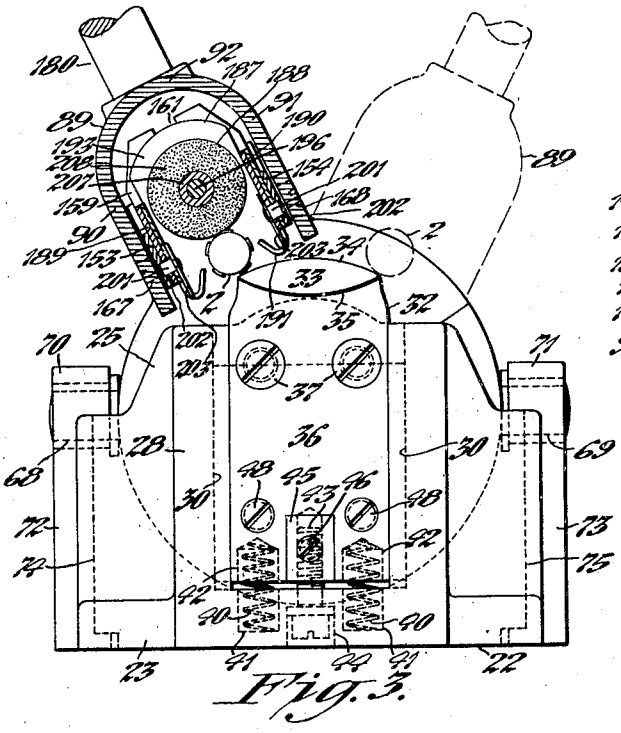


Fig. 3.

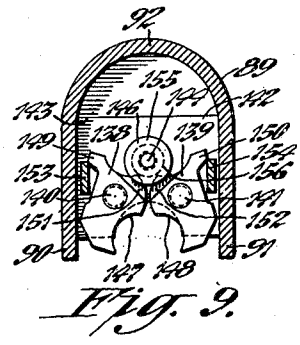


Fig. 9.

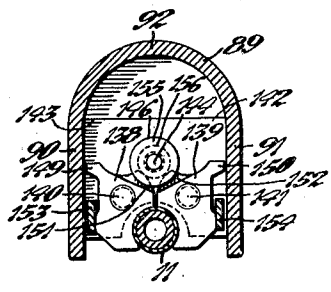


Fig. 10.

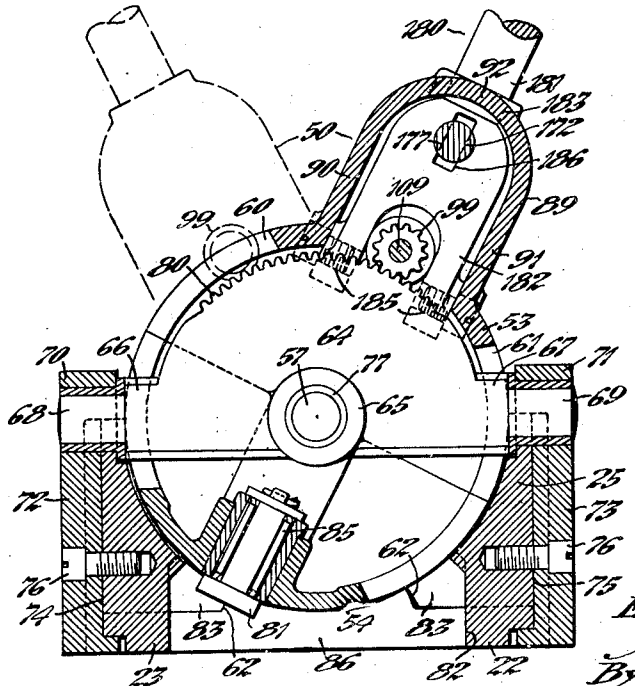


Fig. 4.

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IDENTIFICATION AND RECORDING DEVICE

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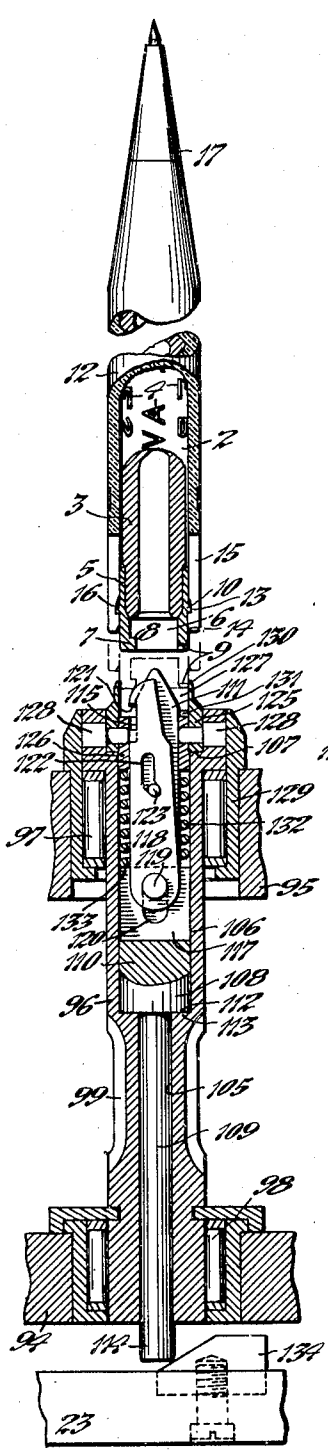


Fig. 6.

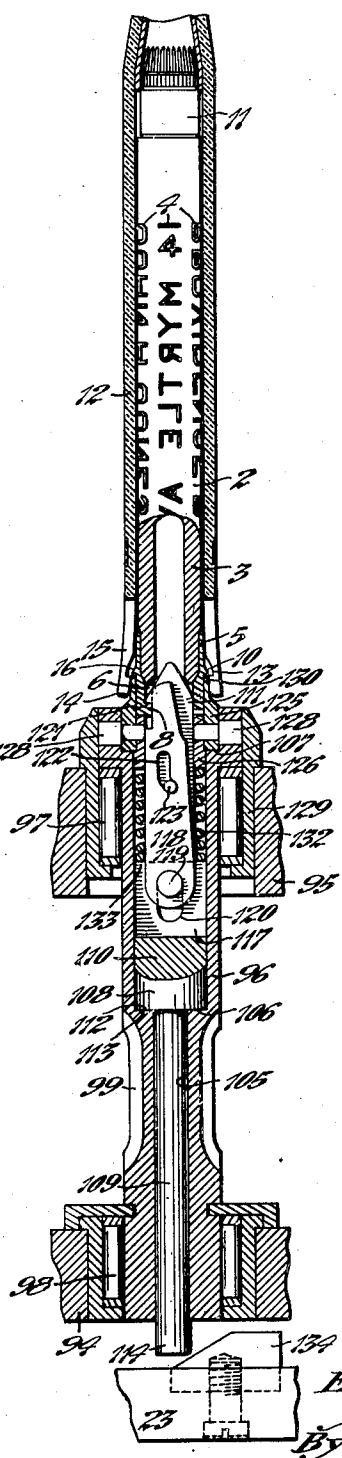


Fig. 7.

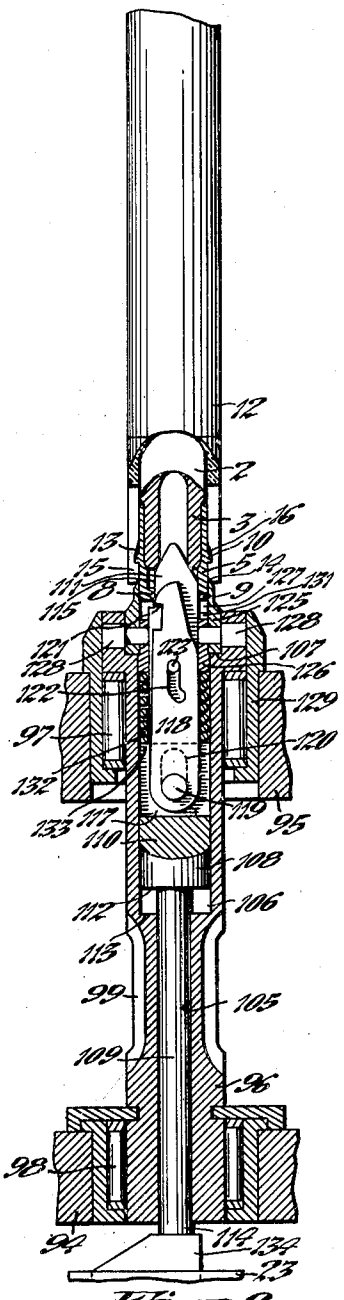


Fig. 8.

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Patented Oct. 11, 1938 2,132,403

UNITED STATES PATENT OFFICE

2,132,403

IDENTIFICATION AND RECORDING DEVICE

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Application March 6, 1935, Serial No. 9,627
Renewed September 21, 1937

37 Claims. (Cl. 101—212)

This application is a continuation in part of our copending application, Serial No. 568,048, filed October 10, 1931, as to all common subject-matter.

The present invention relates to a method and apparatus for use in mercantile establishments to record or print identifying indicia from a detachable identification token adapted to be retained and carried by the person or customer to be identified.

One of the objects of the present invention is to provide a recording or printing machine for transferring identifying indicia from a quickly attachable and detachable printing roller or token to a blank or other legend-receiving medium placed in contact therewith.

Another object of the invention is to provide a machine of the type indicated which may be actuated by a simple, manual operation to move an identification token through a predetermined cyclic path to record indicia on a blank and then render the token accessible for quick removal and substitution by another.

Another object of the invention is to provide a machine of the type indicated comprising a carriage and printing roller adapted for travel across a platen and having means for rotating the roller during the movement of the carriage.

Another object of the invention is to provide a machine of the type indicated with controlling means for holding a pivotally mounted carriage in a printing or recording position during its movement across a yieldable arcuate platen to insure a completion of a printing operation before the carriage can be moved to an inoperative position away from the platen where the printing element is accessible for detachment.

Another object of the invention is to provide a machine of the type indicated which is selective to receive only detachable printing tokens intended for use therewith even though applicable to a plurality of other similar machines.

Another object of the invention is to provide a machine of the type indicated having means for locking a printing roller in operative position during its movement across a platen and for releasing the roller upon movement away from the platen where the roller is readily accessible for detachment.

Another object of the invention is to provide a printing roller for use in a machine of the type indicated with means for sheathing and locking it in a protective casing whereby it is removable therefrom only by application to a particular machine in the custody of an authorized person.

Still another object of the invention is to provide a printing roller adapted to be rotatably supported on a carriage of a machine of the type indicated and having means for quick attachment in locking engagement with a rotating element on the carriage.

Still another object of the invention is to provide a machine of the type indicated which is compact in structure, easily and quickly manipulated, efficient and positive in operation and capable of extended use without repair or adjustment.

Further objects of the invention are set forth in the following specification which describes a preferred form of construction of the machine and printing roller, by way of example, as illustrated by the accompanying drawings. In the drawings:

Fig. 1 is a longitudinal sectional view of the recording or printing machine incorporating the novel features of the present invention and showing the position of the carriage and printing roller during their movement across the platen of the machine;

Fig. 2 is a similar view of the machine showing the carriage moved away from the planten to render the printing roller accessible for detachment;

Fig. 3 is an end elevational view of the machine shown partly in section to illustrate the relationship of the printing roller and platen during a printing operation;

Fig. 4 is a transverse sectional view of the machine taken on line 4—4 of Fig. 1 and showing the pivotal mounting of the carriage on the base;

Fig. 5 is a plan view of the base of the machine showing the guiding grooves for controlling the movement of the carriage;

Fig. 6 is a detailed sectional view of the driving spindle of the machine showing a token or printing roller in position prior to its attachment thereto and illustrating the printing roller as sheathed and locked in a protective casing;

Fig. 7 is a view similar to Fig. 6 showing the token positioned in contact with the driving spindle with the printing roller locked in driving engagement therewith and the casing released from locking engagement with the roller;

Fig. 8 is a view similar to Figs. 6 and 7 showing the locking means on the spindle released to provide for detachment of the roller and the protective casing locked to the roller;

Fig. 9 is a sectional view taken on line 9—9 of Fig. 1 showing the embracing bearing for sup-

porting and centering the free end of the printing roller;

Fig. 10 is a sectional view similar to Fig. 9 showing the embracing bearing in its closed operative position engaging the printing roller;

Fig. 11 is a detailed perspective view of the ink-roll cradle;

Fig. 12 is a detailed perspective view of the cradle-support and actuator for the roll-embracing bearing;

Fig. 13 is an end view of the driving spindle showing the locking means for the roller; and

Fig. 14 is a perspective view of the detachable printing roller.

Department stores and other merchandizing establishments having large clienteles generally furnish each charge customer with some sort of token or coin bearing indicia by means of which the customer may be identified to clerks or employees. With such a system in use the token is shown to the salesperson at the time of a purchase and the clerk fills out the charge or sales slip with data furnished by the customer.

Another more advanced method of handling charge accounts in large mercantile establishments is to furnish the customer with a flat metal printing plate having raised characters thereon embodying indicia for identifying the holder and also adapted to print and record the required information on sales or charge slips. Usually, the name and address of the customer against whose account the goods are to be charged, and in some instances the number or distinguishing symbol of the account, are embossed in type or characters on the face of the plate. With this form of token the required information may be recorded by placing the plate in a suitable press or apparatus which imprints its indicia on the charge slip by means of carbon paper or an inked ribbon.

The previously used methods above described have certain disadvantages in that the small coin-like token is easily mislaid or lost and may sometimes fall into the hands of an unauthorized and unscrupulous person. Such coin-shaped tokens are also likely to be confused with currency carried in the purse or pocketbook and therefore are not adapted for convenient and ready use. In the case of printing plates, these must necessarily be of relatively thin metal in order to economize in weight and thus they are apt to be bent or broken. Moreover, such plates have sharp edges and corners which are liable to inflict injury to the hand or to tear the lining of the purse or pocketbook in which they are carried.

The present invention relates generally to an improved construction of identification token and coöperating printing apparatus which eliminates the disadvantages heretofore experienced. The novel identification token of the present invention is in the form of a small quick-detachable printing roller sheathed and locked in a hollow protective casing so that the identifying indicia on the token cannot be observed by an unauthorized person.

The token is applied to the movable carriage of the machine and operatively connected therewith by selective means which receive only tokens intended therefor. The carriage is provided with automatically-operated means for releasing the protective casing from its locked engagement with the printing roller and for thereafter rotatably supporting the roller in locked engagement with a driving element. The invention further provides for controlled movement of the carriage through a cyclic path across the platen to perform a printing operation and then away from the platen to a position where the printing roller is accessible for detachment. The carriage also has means for inking and rotating the roller during its movement. The machine is so constructed and arranged as to lock the printing roller to the driving element during its movement across the platen and to automatically release the roller upon movement away from the platen where it is available for removal.

Referring first to Fig. 14 of the drawings, the identification token or printing roller 2 is here shown as comprising a cylindrical body member 3, preferably of metal, having curved type-characters 4 on its periphery arranged in longitudinal rows to provide the desired indicia to be printed. The characters 4 may be provided on the periphery of the roller by embossing, soldering or molding them upon a detachable supporting element or strip adapted to be locked in longitudinal grooves spaced around the periphery of the roller in the manner disclosed in our prior application or by any other suitable method.

A driving collar 5 at one end of the roller 2 may be formed integral therewith or made as a separate element and fixed thereon as disclosed in our prior application. The driving collar 5 is recessed as at 6 to form a generally annular end wall 7 having an interior flat ledge or seat 8 and a marginal notch 9 in the end for selective locking engagement with an operating element of the machine as will later appear. Adjacent its outer end the collar 5 is provided with an annular flange or rib 10 which extends radially from its periphery. At its opposite end the roller is provided with a bearing collar 11 of suitable construction to be engaged by a supporting bearing.

The printing roller 2 is sheathed and locked in a cylindrical casing 12, shown in Figs. 6, 7 and 8, to protect the type faces and conceal the indicia on its periphery to thereby prevent fradulent use by an unauthorized holder. The printing roller 2 is inserted through the open end of the casing 12 and is locked in place therein by the engagement of the flange 10 with an interior locking groove 13 in the casing. To facilitate the insertion of the roller 2 the inner rim of the open end of the casing 12 is rounded or beveled at 14 and provided with a plurality of spaced longitudinal slits to form yielding fingers 15. The annular flange 10 on the roller 2 is correspondingly beveled on one side at 16 to adapt it to slide under the rounded or beveled edge 14 of the casing at which time the fingers 15 yield to spring outwardly away from the flange. As the flange 10 is engaged with the groove 13 the fingers 15 spring back into close contact with the collar 5. The groove 13 and flange 10 preferably encompass the driving collar 5, thus making it necessary to expand all of the spring-fingers 15 simultaneously to free the flange 10 and permit withdrawal of the roller 2 from the casing 12. The casing 12 may be composed of any suitable impervious material and is preferably of cylindrical shape to render it distinguishable from keys and other objects with which it may be contained in a handbag or purse. The cylindrical shape of the casing 12 is also advantageous in eliminating sharp edges, corners or projections which would tend to abrade the material of the receptacle in which it is normally carried. As shown in Fig. 6, the casing 12 forms a holder for an automatic pencil attachment 17 positioned at one end thereof so that the token may serve to perform a plurality

of functions. Although the casing is intended to be opaque to prevent fraudulent use it is to be understood that the casing could as well be transparent to identify the bearer without removal of the printing roller therefrom if that type of token is desired.

The printing roller 2 may be used in any suitable machine either hand- or power-operated or may be applied to use in addressing machines or the like. The present invention provides a novel machine particularly suitable for use in mercantile establishments in that it is small, compact and adapted for manual operation to print or record indicia on sales slips or for addressing tags, envelopes and other media.

As shown in Figs. 1 and 5, the frame 22 of the preferred form of the machine is constituted as an integral structure including a substantially rectangular base 23 rounded at one end and having a plurality of countersunk holes 24 adjacent the edge to adapt it to be permanently fixed to a table, counter or other support, not shown. A circular wall 25 extends upwardly from the base 23 and centrally positioned within the wall 25 on the upper face of the base 23 is a boss 26 having a spherical recess 27. On the outer face of the wall 25 and intermediate its ends is an upstanding rectangular projection 28 which is recessed to provide a vertical guideway 29 having inner grooves 30 on the opposite side walls of the guideway. A backing plate 31 is slidably mounted in the grooves 30 for holding an adjustable platen 32 formed with a vertical portion or arm 36 having a sliding fit in the outer guideway 29.

The platen 32 as illustrated in Figs. 1, 2 and 3 comprises a horizontally extending anvil 33 which overhangs the base 23 with an upper face 34 of arcuate contour and an under face 35 rounded and tapered to adapt a sales slip or card to be placed thereon or an envelope to be slid over its end. The depending arm 36 of the anvil 33 is preferably formed integral therewith and secured to the backing plate 31 by a pair of screws 37 extending through countersunk holes 38 in the arm and engaging alined threaded holes 39 in the plate. The platen 32 is yieldingly urged upward by means of spaced compression springs 40 positioned in pockets 41 in the base of the frame 22 of the machine and pockets 42 formed between the backing plate 31 and the arm 36. The upward movement of the platen 32 is limited by an adjusting screw 43 extending through the base 23 between the springs 40 with its shank in threaded engagement with a tapped hole in a swivel-block 45 fixed to the arm 36; the head of the screw being seated in a countersunk recess 44 in the base. The anvil 33 may be adjusted vertically to any desired position by turning the adjusting screw 43 whereafter it is locked by tightening a set-screw 46 in the block 45 against the shank of the adjusting screw. The rearward face of the depending arm 36 is cut away as at 47 so that the platen 32 may have a limited swinging movement on the attaching screws 37 to provide for horizontal adjustment to level the anvil 33. To this end set-screws 48 extend through the arm 36 and into the engagement with the backing plate 31. The platen is resiliently mounted for vertical movement to accommodate printing blanks of varying thickness and to insure an even impression of the legend on the work.

A carriage 50, including a body portion 51 and a depending spherical bearing element 52, is pivotally mounted on the base 23 for movement about two axes extending at right-angles to each other. The bearing 52 is comprised of a depending hollow spherical part 53 formed integral with the body portion 51 and a cooperating hemisphere 54, the two parts having corresponding interfitting projections 55 and 56 on opposite sides thereof. The two cooperating elements 53 and 54 are connected by a pin 57 which passes through the interfitting projections 55 and 56 and constitutes an axial mounting on which the carriage 50 may rotate. The pin 57 is held in operative position with respect to the spherical bearing 52 by means of a set-screw 58 extending through an aperture in the hemisphere 54 and engaging an annular tapered groove 59 in the pin. The spherical bearing 52 is slotted on opposite sides at 60 and 61, see Fig. 4, and the slots lie in a plane normal to the pin 57.

As shown in Fig. 1, the spherical bearing 52 is pivotally mounted on the base 23 by means of a frame 64 having a centrally-positioned bearing hub 65 which embraces the pin 57 and trunnion-arms 66 and 67, shown in Fig. 4, extending at right-angles to the axis of the hub and outwardly through the slots 60 and 61 in the spherical bearing. The sides of the trunnion-arms 66 and 67 are flattened to engage the sides of the slots 60 and 61 and their ends 68 and 69 are mounted in bearings 70 and 71 carried by stanchions 72 and 73. The stanchions 72 and 73 are positioned in recesses 74 and 75 formed in the outer face of the wall 25 of the frame 22 on opposite sides thereof and fixed thereto by screws 76. The hub 65 is arranged with its ends abutting spaced walls 78 and 79 in the hollow lower hemisphere 54 of the bearing 52 with a bushing 77 in its bore serving as a bearing for the pin 57. The frame 64 also includes an arcuate rack 80 that extends between the trunnion-arms 66 and 67 and about an axis at the center of the hub 65 and pin 57. As shown in Figs. 3 and 4, the axis of the trunnion-arms 66 and 67 extends at right-angles to the axis of the arcuate face 34 of the platen 32, and the platen is so adjusted vertically with respect to the trunnions that the pin 57, when horizontally positioned, lies in and forms a continuation of the axis of the arcuate face of the platen. With the spherical bearing 52 so mounted on the base 23 the carriage 50 may be rotated on the pin 57 for movement across the platen 32 on an axis common with the axis of the face 34 of the platen and it may also be rotated on the trunnion-arms 66 and 67 to a position away from the platen, as shown in Fig. 2.

Although the carriage 50 has a gimbal mounting to adapt it for movement about two axes at right-angles to each other, its motion is controlled by a bearing roller 81 which engages a slot 82 and guideways 83 formed in the base 23 or a track 84 adjacent the upper edge of the circular wall 25, see Figs. 1 and 5. The bearing roller 81 has its shank mounted in an antifriction or roller bearing 85 at the bottom of the hemisphere 54 and when it is engaged in the slot 82 it holds the pivot-pin 57 in a horizontal position during the pivotal movement of the carriage 50 across the platen face 34. As shown in Fig. 5, the slot 82 in the base 23 is of substantial length and engages and holds the roller 81 during a complete movement of the carriage across the top of the platen 32 so that the printing roller will print a complete and uniform impression on the

blank. A hardened bearing plate 86 is fixed within the slot 82 on the side which takes the thrust of the roller 81 to reduce the wear between the parts. At the ends of the slot 82 the plate 86 is cut away at 62 and the base recessed to allow engagement of the roller 81 with the guideways 83 which are of curved formation and extended upwardly to meet in an apex at 87, see Fig. 5. The guideways 83 act to direct the bearing roller 81 into the slot 82 when the carriage 50 is moved from its vertical inoperative position to its horizontal printing position. During this movement of the carriage 50 the bearing roller 81 is shifted from engagement with the circular track 84 to engagement with the slot 82 at one end thereof. A buffer 88, constituted by an arcuate strip of soft rubber or the like, is mounted on the flat part of the base 23 between the ends of the wall 25 to cushion the shock when the carriage 50 is moved from its horizontal to its vertical position at the completion of a printing operation.

The body portion 51 of the carriage 50 is in the form of a hood 89 which extends laterally to a position overlying the platen face 34. As shown in Figs. 1 and 3, the hood 89 is of generally rectangular form having side walls 90 and 91, a crowned top wall 92 and end walls 93 and 94. Between the end walls 93 and 94 is a septum 95 or partition wall which, with the rearward end wall 94, provide housings for the driving spindle 96 as next described.

As shown in Figs. 1 and 2, the spindle 96 is journaled in antifriction roller bearings 97 and 98 held in bores in the septum 95 and end wall 94, respectively. The spindle 96 extends laterally above the arcuate rack 80 and has its periphery formed with gear-teeth 99 which engage the teeth on the rack. Through the above described gear-and-rack connection the spindle 96 is rotated by the oscillatory movement of the carriage 50 about the pin 57, and due to the engagement of the flattened sides of the trunnion-arms 66 and 67 with the slots 60 and 61 the rack 80 is always held in an operative position with respect to the spindle 96. The ratio between the gear-teeth 99 on the spindle 96 and the teeth of the rack 80 is such that the printing roller 2 when rotatably clutched to the spindle 96 is caused to roll across the face 34 of the platen 32 with a complete revolution during the pivotal movement of the carriage 50 between prescribed limits.

The printing roller 2 is adapted to be clutched in driving engagement with the end of the spindle 96 by means carried therein. To this end the spindle 96 is axially bored throughout its length as at 105 with two stepped counterbores 106 and 107 as shown in Figs. 6, 7 and 8. An axial plunger 108 is mounted in the spindle 96, being formed with a reduced portion or shank 109 in the bore 105, an enlarged collar 110 in the counterbore 106 and a reduced centering head 111 in the counterbore 107 projecting outwardly beyond the forward end of the spindle. The collar 110 forms a shoulder 112 adapted to engage the shoulder 113 between the bore 105 and counterbore 106, and the shank or rod 109 is of such length that its end 114 extends beyond the rearward end of the spindle 96. The end of the centering head 111 is of generally conical shape adapted to enter the recess 6 in the driving collar 5 on the printing roller 2 and is formed with a flat side 115 for cooperation with the internal flat ledge or seat 8 of the collar. The head 111 is slotted diametrically at 117 to receive a latching lever 118 pivotally mounted on a pin 119 having its ends held in the walls of the spindle 96. The pin 119 extends through longitudinal slots 120 in the side portions of the head 111 so that the head may be slid longitudinally relatively of the spindle. The lever 118 has a tapered or rounded outer end to correspond with the conical end of the head 111 and a detent-shoulder 121 adapted to be projected outwardly from the cut-away or flatted side 115 of the head. Intermediate its ends the lever 118 has a cam-slot 122 engaged by a pin 123 which extends across the slot 117 with its ends held in opposite sides of the head 111.

Within the larger counterbore 107 at the forward end of the spindle 96 there is positioned an annular collar 125 having an internal diameter substantially equal to the outside diameter of the collar 5 on the end of the printing roller 2. Within the collar 125 is a sleeve 126 enclosing the centering head 111 on the plunger 108 and of such length as to leave an annular recess 127 at the end of the spindle 96 for receiving the circular wall 7 of the collar 5 on the printing roller 2. The circular collar 125 and the sleeve 126 are fixed to the driving spindle 96 for rotation therewith by means of radial pins 128 held in position by the projecting end of the fixed sleeve 129 of the bearing 97 which surrounds the end of the spindle. The edge 130 of the collar 125 is beveled or tapered on its periphery to engage under the inner beveled edge 14 of the spring-fingers 15 at the end of the casing 12. The end of the sleeve 126 is provided with a projection or key 131 of a contour corresponding to the contour of the notch 9 on the end of the driving collar 5 of the printing roller 2.

A helical spring 132 is held under compression between the end of the sleeve 126 fixed to the spindle 96 and a shoulder 133 on the plunger 108. The spring 132 normally urges the plunger head 111 inwardly to move the pin 123 carried thereby toward the offset end of the cam-slot 122 so that the free end of the latching lever 118 is projected outwardly from the flat side of the head as shown in Fig. 6. In this normal position of the centering head 111 the detent-shoulder 121 on the latching lever 118 is adapted to engage the seat 8 within the driving collar 5 of the printing roller 2 to clutch it to the spindle. However, when the plunger 108 is moved longitudinally of the spindle 96 toward the outer end thereof the pin 123 in the cam-slot 122 will rock the lever 118 about the pivot-pin 119 to withdraw the detent-shoulder 121 from engagement with the driving collar 5. When withdrawn the latching lever lies within the slot 117 in an inoperative position, as shown in Fig. 8.

The flat side 115 of the centering head 111 and the projection 131 on the sleeve 126 provide for selective locking engagement of authorized printing rollers with the operating mechanism of the particular machine for which they are intended. With the notched recess 9 and internal ledge or seat 8 alined respectively with the flat side 115 of the centering head 111 and the projection 131 on the sleeve 126, the printing roller 2 can be moved axially to a position shown in Fig. 7. In this position the seat 8 on the printing roller 2 is in a position to be engaged by the tapered end of the latching lever 118 when the latter is projected outwardly from the centering head 111. On the other hand, if the notch 9 is not in register with the projection 131 the printing roller 2 cannot be moved into the recess 127 to a position where the latching lever 118 will engage the seat or ledge 8. It will be understood

that the machines used by different establishments will have the projection 131 on the sleeve 126 differently positioned with respect to the flat side 115 of the centering head 111 and the authorized printing rollers carried by the persons to be identified will have their edges notched to correspond with the projections on the machine or plurality of machines with which they are to be used.

The printing roller 2 may be automatically released when the carriage is moved away from the platen 32 by the engagement of the end 114 of the plunger 108 with an upstanding lug 134 on the base 23 of the machine. The lug 134 has a flat top and a beveled side being positioned on the rim of the base 23 adjacent the end of the wall 25 to adapt it to be engaged by the end portion 114 of the plunger 108 when the carriage 50 is rotated on the trunnion-arms 66 and 67 in a direction away from the platen 32 at the completion of a printing operation, see Fig. 8. In all other positions of the carriage 50 the end 114 of the plunger clears the base 23 due to the engagement of the bearing roller 81 with the circular track 84 adjacent the top of the wall 25. Normally, the end 114 of the plunger 108 is moved outwardly from the spindle 96 by the spring 132 and with the free end of the latching lever 118 projected outwardly from the side of the centering head 111, see Figs. 6 and 7.

The forward end of the printing roller 2 is held in its operative position by a pair of pivoted jaws 138 and 139, shown in detail in Figs. 9 and 10, which serve as bearings for rotatably supporting this end of the roller. Referring to Figs. 1, 2, 9 and 10, the jaws 138 and 139 are pivotally mounted on pins 140 and 141 projecting from a plate 142 which is mounted in a recess 143 on the inner face of the end wall 93 of the hood 89. The plate 142 is fastened to the wall 93 by a screw 144 which extends through the wall and plate and is threaded into a nut 145 having a shank passing through the plate. The nut 145 is provided with an enlarged shouldered head 146 having an end flange 155 spaced from the plate 142 to form an annular groove 156. The jaws 138 and 139 are provided with arcuate edges 147 and 148 adapted to engage around the printing roller 2 and wing portions 149 and 150 on opposite sides of the pivot-pins 140 and 141, respectively. The jaws 138 and 139 are held in proper alinement by means of curved fins 151 and 152 which slide in the groove 156 between the flange 155 on the head 146 of the nut 145 and the plate 142.

The jaws 138 and 139 are rocked about the pivot-pins 140 and 141 by the action of a pair of arms 153 and 154 arranged with their ends adapted to engage the wings 149 and 150. Adjacent their ends the arms 153 and 154 are deformed or offset outwardly to provide bearing bosses 157 and 158 which engage the inner face of the side walls 90 and 91 of the hood 89 to hold the ends properly positioned with respect to the jaws 138 and 139. When the arms 153 and 154 are moved upwardly, as shown in Fig. 9, the jaws 138 and 139 are rocked to move their arcuate edges 147 and 148 apart to an open or releasing position; and when the arms are moved downwardly to the position shown in Fig. 10 the jaws are moved to shift their arcuate edges into closed position to engage the periphery of the bearing collar 11 on the printing roller 2 to support the latter in its operative position.

As illustrated in Fig. 12, the arms 153 and 154 are constituted as the sides of a forked member, being connected at their rearward ends by a cross-strip 159 to which a block 160 is riveted or otherwise secured. The cross-strip 159 is formed with a rectangular recess 161 in its upper edge and an arcuate recess 162 is formed in the lower portion of the strip and block to provide a clearance for the spindle 96. On its opposite sides adjacent the bottom the block 160 has threaded apertures 163 and 164 for receiving a pair of screws 165 and 166 positioned with their heads in bearing apertures 167 and 168 in the side walls 90 and 91 of the hood 89. Thus the arms 153 and 154 and block 160 form in effect a bell-crank lever that is normally urged to rock about its pivot in a counterclockwise direction, as viewed in Fig. 1, by springs 169 compressed between the septum 95 and cross-strip 159 and held in place by a pair of guide-pins 171 projecting from the cross-strip. In this position of the bell-crank lever the ends of the arms 153 and 154 hold the pivoted jaws 138 and 139 in engagement with the bearing collar 11 on the printing roller 2. The bell-crank lever is actuated about its pivot in a clockwise direction by a push-rod 172 mounted in a bearing 173 in the septum 95 and a hollow bearing 174 screwed into the rearward end wall 94 of the hood 89. The push-rod 172 has a hooked end 175 which engages the cross-strip 159 in the recess 161 and is shouldered at 176 intermediate its ends. Between the shoulder 176 and the hollow bearing 174 is a spring 179 which normally urges the push-rod 172 to an inoperative position. The push-rod 172 is flatted at 177 on its opposite sides forwardly beyond its shoulder 176 to provide diametrically opposite shoulders 178 for a purpose as later explained.

A handle 180 is provided for rocking the carriage 50 on its pivots, the handle comprising a bifurcated lever 181 arranged with its forked portion 182 straddling the spindle 96 and its opposite end projecting outwardly through a slot 183 in the top wall 92 of the hood 89 and terminating in a knob 184 adapted to be grasped by an operator. The bifurcated end 182 of the handle 180 is pivotally mounted by means of screws 185 threaded into the sides thereof, as shown in Fig. 4, with the heads of the screws received in apertures in the side walls 90 and 91 to provide for limited rotary movement of the lever 181 in the slot 183. The lever 181 has a slot 186 through which the flatted portion of the push-rod 172 passes, the slot being of such width that the shoulder 178 on the rod will engage the lever. When the handle 180 is rocked about its pivot to the position shown in Fig. 2 it will engage the shoulders 178 on the push-rod 172 to slide the latter to rock the arms 153 and 154 to the position shown in Fig. 9. The handle 180 is normally held in the position shown in Fig. 1 by the action of the cooperating springs 169 and 179 which urge the push-rod 172 forwardly with considerable force.

Besides functioning to actuate the pivoted jaws 138 and 139 at the forward end of the printing roller 2 the arms 153 and 154 are also adapted to support a cradle 187 which holds an inking roller 188 in contact with the printing roller 2. As shown in Fig. 11, the cradle 187 is of generally rectangular shape having side walls 189 and 190 with depending arcuate guard flanges 191 and end walls 192 and 193. The end walls 192 and 193 have flanged apertures 194 and 195 for supporting a shaft 196 on which the inking roller 188 is rotatably mounted, see Fig. 1. As illustrated in Fig. 11, the cradle 187 is constructed of two U-

shaped parts having their sides joined together intermediate the end walls 192 and 193 by riveting, soldering or welding and the overlapped ends of one of the sections are offset to form bearing faces 197 and 198 which engage the inner sides of the arms 153 and 154 of the so-called bell-crank lever shown in Fig. 12. The cradle 187 is pivotally mounted between the arms 153 and 154 by means of pins 201 projecting from its sides and engaging holes 202 in the arms. To provide for detachable connection of the cradle 187 with the arms 153 and 154 the pins 201 are carried at the free ends of flexible spring-fingers 203 having their opposite ends secured to the inner faces of the side walls of the cradle at 204. Depending finger-grips 205 formed integral with the spring-fingers 203 extend to a position below the side walls so that they may be grasped and pressed inwardly to withdraw the pins 201 from engagement with the arms 153 and 154 to permit removal of the cradle 187 from the hood 89 of the carriage 50.

As shown in Fig. 3, the inking roller 188 is of cylindrical shape having an axially bored central core 207 and a surrounding pad 208 of absorbent material such as felt for holding the ink. The roller 188 is journaled in the cradle 187 on a shaft 196 having its ends inserted through the flanged apertures 194 and 195 in the end walls 192 and 193 and deformed or riveted over to hold the shaft in place. The purpose of the pivotal mounting for the cradle 187 on the arms 153 and 154 is to permit the inking roller 188 to adjust itself to engage the printing roller 2 throughout its length. The cradle 187 is so positioned with respect to the spindle 96 and the bearing jaws 138 and 139 that the inking roller 188 is held in contact with the printing roller 2 when the arms 153 and 154 are in the position shown in Figs. 1 and 10, thereby insuring proper inking of the characters on the roller. The method of operation of the complete apparatus is as next explained.

As before noted, the roller 2 is used as an identification token and recording device, the department store or other commercial establishment furnishing each charge customer with one bearing suitable indicia such as the customer's name and address and other particulars if desired. As shown in Fig. 6, the token or printing roller 2 is sheathed and locked in the protective casing 12 by the engagement of its radial flange 10 with the internal locking groove 13 in the casing. When the same roller is to be used with a plurality of machines in different establishments the end which projects from the casing 12 is provided with a plurality of notches such as the notch 9 shown in Fig. 14, adapted to cooperate with projections 131 differently positioned on the spindles of the various machines. Upon making a purchase to be charged to his account the customer presents the token or roller 2 for the purpose of identification and the clerk or sales person applies it to the machine to record the sale in the manner as next explained.

With the form of printing apparatus herein illustrated the printing roller 2 is applied thereto by swinging the carriage 50 upwardly on its trunnions 66 and 67 away from the platen 32 to the position shown in Fig. 2. Under this movement the bearing roller 81 engages the track 84, see Fig. 2, and the plunger 108 is actuated by the engagement of its end 114 with the lug 134 on the base 23 when the carriage is rocked rearwardly on the shaft 57. The longitudinal sliding movement of the plunger 108 causes the detent end of the latching lever 118 to move into the slot 117 in the centering head 111 by the action of the pin 123 sliding in the cam-slot 122, see Fig. 8. The handle 180 is then depressed to slide the plunger-rod 172 whereby to rock the bell-crank arms 153 and 154. The rocking movement of the arms 153 and 154 has the effect to rotate the jaws 138 and 139 to an open position as shown in Fig. 9. The token 2 may then be applied to the carriage 50 by directing the recess 6 in the driving collar 5 over the end of the centering head 111 and rotating the token until the ledge or seat 8 cooperates with the flat side 115 of the head, at which time the driving collar 5 will enter the annular recess 127. The carriage 50 is then moved to carry the end 114 of the plunger 108 away from the lug 134 so that the spring 132 may slide the plunger to project the end of the latching lever 118 outwardly whereby to engage its detent-shoulder 121 with the internal seat 8 on the driving collar 5. During the longitudinal movement of the collar 5 into the recess 127 the beveled edge 130 of the collar 125 engages under the beveled edges 14 of the yielding fingers 15 to spring them away from the flange 10 to release the casing 12 from the roller 2. The casing 12 is then withdrawn from the roller 2 and the handle 180 released to allow the jaws 138 and 139 to rotate to a closed position with their arcuate edges 147 and 148 embracing the bearing collar 11 on the outer end of the roller, as shown in Fig. 10. If the driving collar 5 is not properly notched it cannot be moved into the annular recess 127 to a position where the end of the latching lever 118 will engage the seat 8 and consequently the collar 125 cannot release the casing 12 from engagement with the printing roller 2. Each machine is therefore selective to receive only printing rollers intended for use therewith. When the proper printing roller 2 is applied it will be locked to the spindle 96 at one end and held by the jaws 138 and 139 at its other end with the characters on its periphery in contact with the inking roller 188 which is rotatably mounted in its cradle 187 in the hood 89.

The operator next grasps the handle 180 and rotates the carriage 50 on the pivot-pin 57 while the carriage is in its upright inoperative position. During this rotary movement of the carriage 50 the spindle 96 is rotated by the engagement of its gear-teeth 99 with the rack 80 and the printing roller 2 is inked as it rolls on the inking roller 188. This movement of the carriage 50 is continued until the bearing roller 81 is in a position to enter the guideways 83 at one end of the slot 82 in the base 23. The machine is then ready to perform a printing operation and the operator places the sales slip, card or other object to be printed on the arcuate face 34 of the platen 32 and, if duplicate copies are required, several sheets or slips are laid one over the other with carbon paper therebetween. The carriage 50 is then swung down into the position shown by dotted lines in Fig. 3 with the printing roller 2 adjacent the edge of the arcuate platen 32 and the bearing roller 81 engaging against the bearing plate 86 in the slot 82, as shown in Fig. 1.

The operator then rotates the carriage on the pivot-pin or spindle 57 by a transverse movement of the handle 180 and the printing roller 2 is moved across the arcuate face 34 of the platen 32 to imprint the prescribed indicia on the card or other record sheet. During the movement of the carriage 50 across the platen 32

the printing roller 2 is held in cooperative relationship therewith throughout the entire printing operation by the engagement of the bearing roller 81 with the transverse slot 82 in the base 23. The printing roller 2 is positively rotated during its movement across the platen by its geared connection with the rack 80 so that a clear impression is made upon the blank. To provide the proper contact of the roller with the blank to insure a clear impression of the legend thereon the platen may be adjusted in both a vertical and horizontal plane, thereby correcting any inaccuracies between the arcuate surface of the platen and arcuate plane of movement of the printing roller 2. The yieldable mounting of the platen has the effect to maintain the required pressure between the printing roller and the blank, while also rendering the platen self-adjusting for variations in the thickness of the material or the number of the blanks being operated upon.

At the completion of the printing operation the carriage 50 is rotated on the trunnions 66 and 67 away from the platen 32 to its inoperative position, as shown in Fig. 2, and the sales slip or printed blank may then be removed from the platen. In this inoperative position of the carriage, as above explained, the latching lever 118 may be withdrawn from engagement with the internal seat 8 on the printing roller 2 by engaging the end 114 of the plunger 108 with the lug 134. This engagement slides the plunger 108 axially of the spindle 96 so that the pin 123 carried by the head portion of the plunger is moved in the cam-slot 122 to the position shown in Fig. 8 to release the latching lever 118 from the collar 5 on the printing roller 2. The handle 130 is again depressed to release the pivoted bearing jaws 138 and 139 from the forward end of the printing roller 2. The protective casing 12 may then be slipped over the roller 2 until the flange 10 at the end thereof is engaged in the groove 13 within the casing. The printing roller 2 is thus locked in the casing 12 and may then be removed from the machine to again fulfill its purpose as an identification token. At this juncture the machine is in condition to receive another printing roller which may be applied thereto as before explained.

The token may be carried in a hand bag, pocket or other receptacle with its casing protecting the printing roller from mutilation, while also preventing soiling the hands or staining the lining of the receptacle in which it is placed. Moreover, the protective casing 12 prevents unauthorized use of the token as its indicia is held secret and thus eliminates the danger of its being used to defraud.

It will be observed from the foregoing that our invention provides an efficient device for transferring and recording informatory or identifying indicia from a detachable token carried by a person to a sheet, card, envelope or other blank and for accomplishing the objects as first stated herein.

While the present token and printing machine have been herein described and illustrated as embodied in a preferred form of construction, it is to be understood that various modifications may be made therein and in the manner of their use without departing from the spirit or scope of the invention. Therefore, without limiting ourselves in this respect, we claim:

1. In a printing apparatus, the combination of an arcuate platen, a carriage mounted for arcuate movement over said platen, and a relatively small detachable printing roller on the carriage for cooperation with said platen and adapted to be personally carried as an identification token.

2. In a printing apparatus, the combination of an arcuate platen, a carriage mounted for movement about the axis of the platen arc, and a relatively small detachable printing roller on the carriage having its axis parallel to the axis of the platen arc to adapt it for cooperation with the platen.

3. In a printing apparatus, the combination of an arcuate platen, a carriage mounted for arcuate movement over said platen, a driving spindle on said carriage, a printing roller drivably connected to the spindle, and means for rotating the driving spindle and roller when the carriage is moved over said platen.

4. In a printing apparatus, a support, a platen yieldably mounted on the support, a carriage mounted for movement over said platen, and a relatively small detachable printing roller on the carriage for cooperation with said platen, said platen being adapted to yield while holding a blank to be printed in contact with the roller.

5. In a printing apparatus, the combination of an arcuate platen, a carriage mounted for arcuate movement over said platen, a driving spindle on said carriage having a pinion, a rack engaging the pinion, and a printing roller connected to the spindle for cooperation with the platen, said printing roller being rotated by the pinion and rack connection when the carriage is moved on its mounting.

6. In a printing apparatus, the combination of a support, a platen on the support, a carriage, means for mounting the carriage on the support for movement across the platen and also away from the platen, a printing roller detachably mounted on the carriage for cooperation with the platen, and guiding means for holding the carriage in an operative printing position during its movement across the platen.

7. In a printing apparatus, the combination of a support, a platen on the support, a carriage, means for mounting the carriage on the support for movement across the platen and also away from the platen, a printing roller detachably mounted on the carriage for cooperation with the platen, guiding means for holding the carriage in an operative printing position when moved across the platen, and means for rotating the printing roller during the movement of the carriage across the platen.

8. In a printing apparatus, a platen, a carriage, means for mounting the carriage for movement over said platen and also away from said platen, a printing roller on said carriage for cooperation with the platen, and means for guiding the carriage through a predetermined path during its movement over the platen to properly position the printing roller for cooperation therewith whereby to obtain a complete and uniform impression before the carriage can be moved away from the platen.

9. In a printing apparatus, a platen, a carriage, means for mounting the carriage for movement over said platen and also away from said platen, a printing roller on said carriage for cooperation with the platen, and guides for controlling the movement of the carriage in cooperative relation to the platen and in its movement to an inoperative position away from the platen.

10. In a printing apparatus, a support having a platen thereon, a carriage, a gimbal for mounting the carriage for movement in different direc-

tions on said support, a printing roller on the carriage for cooperation with the platen, and guiding means for controlling the movement of the carriage.

11. In a printing apparatus, a support having a platen thereon, a carriage having a spherical bearing, a socket in the support for receiving the spherical bearing of the carriage, a printing roller on the carriage for cooperation with the platen, and guideways in the socket for controlling the movement of the carriage to either hold the printing roller in operative position with respect to the platen or in its inoperative position away from the platen.

12. In a printing apparatus, a standard having a platen thereon, a carriage having a spherical bearing, a socket in the standard for receiving the spherical bearing of the carriage, a driving spindle on the carriage having a pinion, a stationary rack on the standard engaging the pinion, a detachable printing roller on the carriage drivably connected with the spindle, and a guideway in the socket for controlling the movement of the carriage to hold the printing roller in operative position with respect to the platen.

13. In a printing apparatus, the combination of a platen, a carriage movable over said platen, a quick-detachable printing roller on the carriage for cooperation with the platen, and cooperating interengaging means on the roller and carriage automatically actuated to lock the roller in operative position for rotation during the movement of the carriage across the platen.

14. In a printing apparatus, the combination of a platen, a carriage mounted for movement over the platen, a quick-detachable printing roller on said carriage for cooperation with said platen, means for locking the printing roller in operative position on the carriage during its movement across the platen, and means for releasing the roller after completion of its movement across the platen.

15. In a printing apparatus, a platen, a carriage mounted for movement over said platen and away from said platen, a quick-detachable printing roller on said carriage for cooperation with said platen, means for locking the printing roller in operative position on the carriage during its movement over the platen, and means for releasing the roller when the carriage is moved away from the platen.

16. In a printing apparatus, a platen, a carriage mounted for movement over said platen and away from said platen, a driving spindle on said carriage, a quick-detachable printing roller adapted for connection with the driving spindle and cooperation with said platen, means for locking the printing roller to the spindle during the movement of the carriage over the platen, means for releasing the roller when the carriage is moved away from the platen, and guide means for controlling the movement of the carriage over said platen to hold the printing roller in cooperative relationship therewith.

17. In a printing apparatus, a platen, a carriage mounted for movement with respect to said platen, a printing roller mounted on said carriage and having locking means at one end, locking means on the carriage normally engaging the locking means on the roller, and means for actuating the locking means on the carriage to release the printing roller.

18. In a printing apparatus, a platen, a carriage mounted for movement with respect to said platen, a printing roller mounted on said carriage and provided with an internal locking flange, a resiliently-operated latch normally urged into engagement with the internal flange on the roller, and means for moving the latch to an inoperative position.

19. In a printing apparatus, a platen, a carriage mounted for movement over the platen and upwardly away from the platen, a printing roller on said carriage having locking means thereon, a resiliently-operated latch normally urged into engagement with the locking means on the roller during movement of the carriage across the platen, and means operated by movement of the carriage away from the platen for actuating the latch to release the roller.

20. In a printing apparatus, a platen, a carriage mounted for movement with respect to said platen, a driving spindle on said carriage, a printing roller mounted on said carriage and having locking means at one end, means on the spindle engaging the locking means on the roller, and a plunger for actuating the locking means to release the printing roller.

21. In a printing apparatus, a platen, a carriage mounted for movement with respect to said platen, a spindle on said carriage, a detachable printing roller adapted to be mounted on said carriage, interengaging means for drivably connecting the roller to the spindle, and additional cooperating means on the carriage and printing roller for selectively permitting the application of only those printing rollers intended for use with the carriage.

22. In a printing apparatus, a platen, a carriage mounted for movement with respect to said platen, a driving spindle on said carriage having an annular recess, a detachable printing roller adapted to be mounted on said spindle, means for drivably connecting the roller with the spindle when its end is seated in the recess therein, and cooperating means in said recess and on said printing roller for permitting the seating of only those printing rollers intended for use with the spindle.

23. In a printing apparatus, a platen, a carriage mounted for movement with respect to said platen, a hollow driving spindle on said carriage, a centering head positioned within said spindle to form an annular recess therebetween and having a flat side, a projection at the end of said recess spaced with respect to the flat side of the centering head, and a detachable printing roller adapted for a driving connection with said spindle, said roller having a recess at one end of a contour corresponding to the annular recess in the spindle and the flat side of the head.

24. In a printing apparatus, a platen, a carriage mounted for movement with respect to said platen, a hollow driving spindle on said carriage, a centering head within said spindle forming an annular recess therebetween, a detachable printing roller having an annular collar at one end for insertion into said recess, and a latch in said centering head for engagement with the collar.

25. In a printing apparatus, a platen, a carriage mounted for movement with respect to said platen, a driving spindle on said carriage, a printing roller, means for detachably locking one end of the printing roller in driving engagement with the spindle, means for rotatably supporting the opposite end of the roller in the carriage, and manually-operable means for releasing the locking means from the end of the roller.

26. In a printing apparatus, a standard including a platen, a carriage mounted on said standard

for traversing movement across said platen and also away therefrom, a driving spindle on said carriage, a printing roller for cooperation with said platen, means for locking one end of the roller in driving engagement with the spindle, means for rotatably mounting the opposite end of the roller in the carriage, a guide to control the movement of the carriage during its traverse across the platen to hold the printing roller pressed against the work, means for releasing the end of the roller from the spindle as the carriage is moved away from the platen, and manually-operable means for releasing the opposite end of the roller from its mounting.

27. In a printing apparatus, a platen, a carriage, means for mounting the carriage to rock about two axes at right-angles to each other to adapt it for movement across said platen and away from said platen, a printing roller on said carriage for cooperation with said platen, and an ink roller on said carriage engaging the periphery of the printing roller.

28. In a printing apparatus, a platen, a carriage, means for mounting the carriage to rock about two axes at right-angles to each other to adapt it for movement across said platen and away from said platen, a driving spindle on said carriage, a printing roller detachably locked in driving engagement with the spindle, an ink roller on said carriage engaging the periphery of the printing roller, and means for rotating the spindle to cause the printing roller to be inked by its contact with the ink roller.

29. In a printing apparatus, the combination of a carriage, a printing roller, a casing for sheathing the roller, means to lock the casing to the roller, and means on the carriage for releasing the casing from locked engagement with the roller.

30. In a printing apparatus, the combination of a carriage, a driving element on said carriage, a printing roller, a casing for sheathing the roller, means to lock the casing to the roller, and means associated with the driving element for releasing the casing from its locked engagement with the roller when the roller is moved into engagement with the driving element.

31. In a printing apparatus, the combination of a carriage, a driving element on said carriage having an annular recess therein, a printing roller having a peripheral flange, a casing for the roller having resilient means for engaging the flange on the roller, and a collar surrounding the annular recess in the spindle and having a beveled edge for engagement with the resilient means on the casing to release the latter from its locked engagement with the roller when the roller is moved longitudinally into the annular recess in the spindle.

32. In a printing apparatus, the combination of a carriage, a printing roller, a casing for sheathing the roller, means to lock the casing to the roller, and means on the carriage for releasing the casing from its locked engagement with the roller and locking the roller in operative position on the carriage.

33. In a printing apparatus, the combination of a carriage, a driving spindle on the carriage, a printing roller, a casing for sheathing the roller, means to lock the casing to the roller, means on the spindle for releasing the roller from its locked engagement with the casing, and means co-operating with the releasing means to lock the roller in driving engagement with the spindle.

34. In a printing apparatus, the combination of a carriage, a printing roller having a locking flange adjacent one end, a hollow casing for sheathing the roller having an internal recess for engaging the locking flange on the roller, means on the carriage for expanding the end of the casing to release the printing roller, and means for locking the end of the roller in operative position on the carriage whereby the roller can only be removed from the casing by application to the apparatus.

35. In a printing apparatus, the combination of a support, an arcuate platen on the support, a carriage, means for mounting the carriage on the support to adapt it to rock about the axis of the platen arc and about an axis at right-angles to the axis of the platen arc, and a printing roller detachably mounted on the carriage for cooperation with the platen, said mounting for the carriage adapting it to move across the platen to cause the roller to print and away from the platen to facilitate applying the roller to and removing it from the carriage.

36. Apparatus for identifying customers and recording identifying indicia comprising in combination a recording machine at the place where the customer is to be identified, a secret identification token adapted to be carried by the customer and used in the machine, said identification token comprising a recording element, a detachable casing wholly enclosing the recording element and cooperating locking means on the recording element and casing, and means on the machine automatically operable to release the locking means when the token is applied in operative position thereon whereby the casing may be removed from the recording element to expose the identifying and recording indicia.

37. Apparatus for identifying customers and recording identifying indicia comprising in combination a recording machine at the place where the customer is to be identified, a secret identification token adapted to be carried by the customer and used in the machine, said identification token comprising a recording element, a detachable casing wholly enclosing the recording element and cooperating locking means on the recording element and casing, and means on the machine automatically operable to release the locking means on the token and lock the recording element in operative position on the machine when the token is applied thereto whereby the casing may be removed to expose the identifying and recording indicia.

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